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on
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FIFTY-FIRST ANNUAL MEETING, A. P. H. A.
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THE RELATION OF CONTAMINATED RATIONS TO THE PRESENCE OF C. BOTULINUM IN THE MILK OF LACTATING ANIMALS

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Read before the Joint Session of the Food and Drugs, Public Health Administration and Laboratory Sections of the American Public Health Association at the Fiftieth Annual Meeting, New York City, November 17, 1921

THE communicability of botulism direct from the animal host, independent of the possible rôle of insects, can be excluded unless edible substances containing toxin are ingested. Direct, though delayed transmission, as remote as it may seem, is not completely eliminated in view of the presence of viable C. botulinum spores or spores and toxin in the tissues of affected animals at death, while the presence of the spore in the intestinal tract of apparently healthy animals (fecal carriers) constitutes a source of danger generally unrecognized. Animals consuming contaminated rations (C. botulinum and toxin) under experimental conditions may eliminate the spores in the feces, which possibly gain entrance directly or indirectly to the muscle and other edible substances of the host via the blood and lymph at the time the animals are slaughtered, or as a fecal contamination in the handling of the carcass. Cooking animal food products at the proper temperature renders the toxin inert, yet the possible danger following ingestion of an unsterilized animal product, such as milk, has received little attention is so far as botulinus intoxication is concerned.

This problem may be discussed concretely from the standpoint of milk, since C. botulinum may under experimental conditions be present in milk as a fecal contaminant, or as the result of an artificial teat canal infection of the udder. These facts are worthy of scrutiny, as cheese has already been incriminated in human botulism; while a fecal contamination of milk constitutes a potential danger, which cannot be disregarded, in any improperly cooked food prepared from milk which is allowed to stand for an interval before being consumed. Moreover, freshly drawn milk from artificially infected udders is, under certain conditions, lethal to guinea pigs. The elaboration of toxin in the animal udder tissue or mammary secretion, however, could not be established.*

*Fatality in guinea-pigs has since been noted by Thom, Edmondson, Giltner and Orr. *Jour. of Am. Med. Assoc.*, Sept. 20, 1918, p. 907; *Jour of Infec. Diseases*, Jan. 1922, p. 118, following the injection of spores, the possibility of infection is not entirely eliminated.

The danger of human botulism from home and commercially canned fruits and vegetables has stimulated investigations in recent years concerning the thermal death point of the spores of C. botulinum, and as a result definite standards of temperature sterilization have been established. However, the destruction by heat of the toxin or spores of C. botulinum in milk or milk products, or other uncooked food derived from animals, has not been practiced, nor have sporadic cases of botulism, with possibly few exceptions, suggested the advisability of such measures with reference to the milk supply. The possible rôle of milk-producing animals as a distributor of C. botulinum spores and toxin was suggested in preliminary studies of animal botulism in 1915. It was then observed that certain milk-producing animals, particularly cattle, consumed with impunity rations that were lethal to other more susceptible animal species. The possible direct or indirect communicability of botulinus intoxication to man through the milk of lactating animals has been mildly suggested in the sporadic fatalities in nursing young animals. Mature cattle and pigs are relatively resistant to botulinus toxins though the nursing young are susceptible to artificial exposure by feeding.

THE RELATION OF C. BOTULINUM (AND TOXIN) IN THE FEED OF LACTATING ANIMALS (CATTLE AND SWINE) TO THE PRESENCE OF THE VIRUS IN THE MAMMARY SECRETION

It is a well-known fact that milk, like other secretions of the animal body, may contain a variety of substances which are adventitious or casual constituents of the ration. Not only can milk acquire a peculiar and unpleasant flavor from some species of vegetation, but certain drugs administered by the mouth may be eliminated via the glandular secretion of the lactating animal.

Extraneous pathogens may gain entrance to the milk via the teat canal from unclean utensils or pass into the mammary secretion as a result of a local infection of the udder.

It is scarcely necessary to mention that the consumption of milk and milk products has been associated from time to time with certain ill-defined enteric and nervous manifestations in man. An experience occurring in 1914 may be mentioned in this connection. A group of 150 persons, representing the patrons of a dairy, were simultaneously afflicted. The symptoms included vomiting, diarrhea, sweating, marked prostration, difficulty in swallowing, and pains in the epigastrium. Convalescence was uneventful, although prolonged in some cases. One c.c. of the milk from the above dairy produced death in guinea-pigs. The aërobic flora of the heart's blood and internal organs of the guinea-pig proved sterile to the usual cultural methods, and repeated efforts to isolate B. enteritidis failed. Anaërobic microorganismns, if any, in the milk or in the tissues of guinea-pigs destroyed by the injection of the milk were not studied, for the reason that the relation of the syndrome described to botulism was not suspected. A similar acute illness was observed by one of the writers* in a group of soldiers in 1918, supposedly resulting from eating ice cream, though evidence could not be obtained to definitely incriminate the ice cream.

In order to obtain experimental evidence relative to the presence of the spores of C. botulinum and its toxin in the milk secretion of lactating animals, healthy cows and sows were fed definite amounts of toxin containing spores and vegetative cells, for varying periods of time. The effect upon the animal and the offspring consuming the milk, together with daily bacteriologic findings in the milk, and its effect on guinea-pigs following subcutaneous injection were noted in the following exposure tests:

FEEDING EXPOSURE TEST I

A healthy experimental lactating cow (1650) was fed daily 40 c.c. of unfiltered

*Graham.

broth culture of C. botulinum, type A (854), for a period of thirty consecutive days to note the relation, if any, of the presence of C. botulinum spores and toxin in the food of lactating animals to the presence of spores or free toxin in the mammary secretion. The calves (1650 A and 1650 B) were allowed to nurse the cow (1650) ad libitum through the experiment. The rectal temperatures of the cow and calves were recorded for ten consecutive days preceding the feeding of toxin, and each day during the test. The milk was drawn daily in sterile containers and ½ c.c. of the milk was injected subcutaneously into guinea-pigs. Each sample of milk was also cultured for spore-bearing anaerobes. Duplicate seedings of the milk were made, only one being attenuated sufficiently to destroy vegetative bacteria. The milk cultures were then incubated for ten days and tested for toxicity. This procedure was employed daily during ten days preceding the feeding of toxin and spores to the cow as well as during the thirty-day exposure period. At intervals the feces of the cow were examined for C. botulinum.

C. botulinum, type A, was not present in the milk during the preliminary ten-day period but on the sixth, seventeenth, and twentieth days it was demonstrated by cultural methods. Free toxin could not be demonstrated in the milk on any day. A few days following the conclusion of the test, as a result of subcutaneous injections of the toxin, the cow died of chronic botulism. The internal organs proved positive to C. botulinum, as had the feces at intervals during the test. The calves nursing the cow developed unthrift, but their condition was not definitely attributed to a chronic botulinus intoxication, though this possibility is not entirely eliminated.

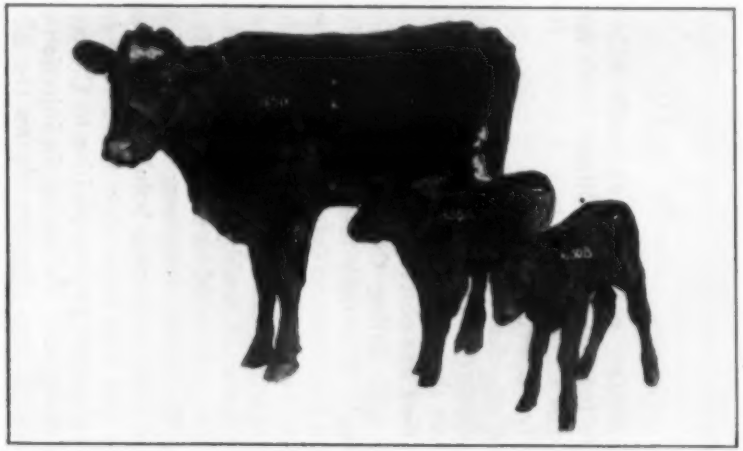
The presence of C. botulinum in the milk on only three days during the time the cow was exposed by feeding, suggested an external udder or fecal contamination of the milk rather than a local mammary infection via the blood and lymph stream.

FEEDING EXPOSURE TEST II

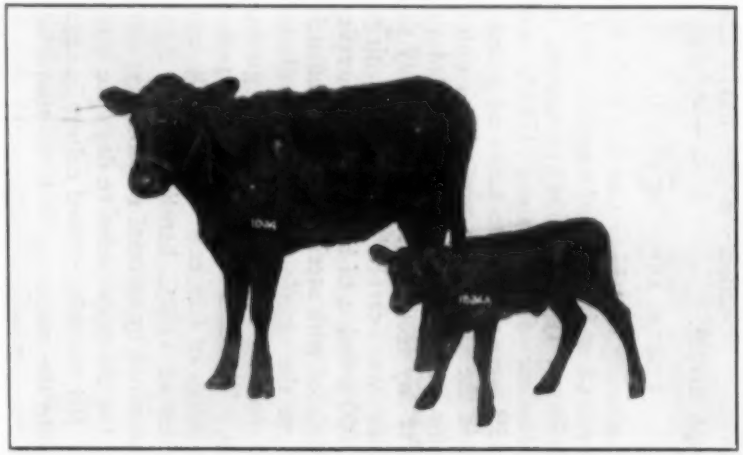
Lactating cow 1745 was fed each day 80 c.c. of unfiltered broth culture of C. botulinum, type A (854), disguised in wholesome feed. Calves 1745A and 1745B were allowed to nurse ad libitum. As in the first test, a preliminary observation period of ten days preceded the thirty-day feeding period. Each day the udder was carefully washed with a 1/1000 solution of bichloride of mercury and dried with sterile gauze immediately before the sample of milk was collected for seeding and injection into guinea-pigs. Throughout the exposure period the feces of this cow were heavily contaminated with C. botulinum, type A, as determined by cultural methods, yet during the thirty consecutive days the virus was fed, the milk proved culturally negative to the spores of C. botulinum while free toxin in the milk could not be demonstrated. The calves remained apparently healthy, though the cow lost in weight.

FEEDING EXPOSURE TEST III

Lactating cow 1824 and calf 1824A were fed 160 c.c. of unfiltered broth culture of C. botulinum, type A (854), for thirty consecutive days. The udder was carefully cleansed with 1/1000 bichloride of mercury and dried with sterile gauze before the milk was drawn each day. No ill effect was observed in either the cow or the calf during the thirty-day feeding period. The milk also proved negative to C. botulinum as determined by cultural methods. Guinea pigs receiving subcutaneously ½ c.c.—1 c.c. of the milk each day remained healthy, with the exception of the pig injected on the sixth day. This pig developed symptoms indistinguishable from a chronic botulinus intoxication and died seven days later. The internal organs proved positive to C. botulinum, type A. Following the injection of the milk into a guinea-pig on the 27th



TEST 1



TEST 3

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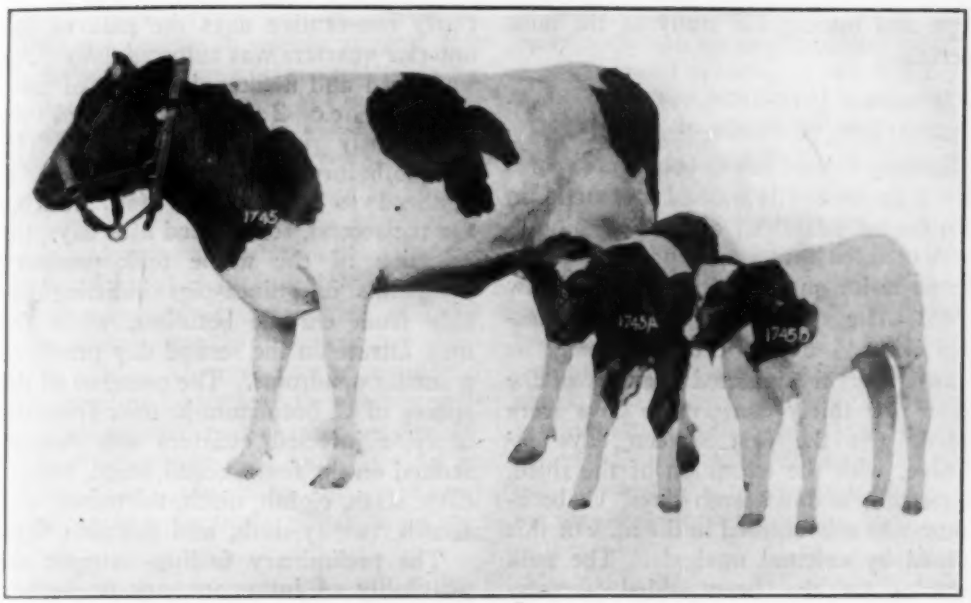
TEST 5



TEST 2

day death occurred in two hours. A duplicate sample of the unfiltered milk and also a sterile filtered sample of the milk serum obtained the same day were injected into guinea-pigs with negative results.

FEEDING EXPOSURE TEST IV

Lactating sow 1942 with two nursing young was fed each day for ten consecutive days, 100 c.c. of unfiltered botulinus toxin, type A (364),** disguised in wholesome feed. The udder was washed before the milk sample was drawn. Notwithstanding precautionary measures, the time involved in securing the milk exposed each sample unduly. On the fourth and last days of a ten-day feeding period, the milk contained the spores of C. botulinum, type A. No ill effect was noted in the guinea-pigs injected with daily milk samples. The deductions on the nursing offspring are withheld pending further observation.

FEEDING EXPOSURE TEST V

The preceding test was repeated with sow 1938 and four nursing young. No ill effect in nursing young was observed. The daily milk samples proved positive to C. botulinum, type A, on the first, third, fifth and sixth days. The positive findings in the milk samples so far as could be determined were related to an external udder and pen contamination. Guinea pigs receiving subcutaneous injections of the fresh milk remained healthy.

THE RELATION OF AN ARTIFICIAL C. BOTULINUM SPORE INFECTION OF THE TEAT CANAL TO THE MAMMARY SECRETION

The bacteriologic findings of the milk in the foregoing experiments failed to explain under what circumstances, if at all, nursing young (calves and pigs) from healthy dams might succumb to a specific botulinus intoxication. However, the prevalence of C. botulinum in the feces of the experimental animals, as well as in the soil of certain feed lots, suggested the possibility of an external udder or fecal contamination, or that the teat canal or mammary gland might become infected. Experimentally the effect of same could not be demonstrated more accurately than by establishing an artificial infection of the udder, followed by a daily bacterio-

**C. botulinum, type A (364), was isolated from oats that produced spontaneous death in nursing pigs when fed to the dam.

logic and toxicogenic study of the milk secretion.

ARTIFICIAL INFECTION OF POSTERIOR QUARTERS OF UDDER OF COW 1745

Seventy-five million C. botulinum spores and vegetative cells washed free of toxin and heated to 80° C. for fifteen minutes were injected with aseptic precaution into the posterior quarter of the udder of cow 1745. The results of injecting guinea-pigs with ½ c.c. of the whole milk as drawn from the infected quarters of the udder for thirty consecutive days were noted. On the first sixteen days inclusive, with the exception of the third, thirteenth, and fifteenth days, C. botulinum was encountered in the milk of this animal by cultural methods. The milk samples on the twenty-third, twenty-fourth, and twenty-fifth days also proved positive. The frequency of positive findings in the milk of the artificially infected udder suggested that the spore could survive at least twenty-five days in the mammary gland. Subsequent evidence on this point indicates that infection artificially established may remain a much longer time. Guinea-pigs, injected with ½ c.c.—1 c.c. of the whole milk on the first, second and twenty-fifth days, respectively, developed typical and fatal symptoms of botulism. The period elapsing from the day of injection until death occurred, involved from eight to eleven days. A retrogressive attitude, followed by emaciation, was observed in the guinea-pigs two or three days after the injection of the milk. The possibility of an intramammary toxin production was thus suggested in view of the fact that toxin-free spores fail to produce ill effects following ingestion or subcutaneous injection.

Calves 1745A and 1745B were allowed to nurse from the infected as well as from the healthy quarters of the udder of this animal for twenty-three days. At this time the anterior quarters were injected with the same inoculum as had been used in the posterior quarters. For thirty consecutive days the milk of the anterior quarters was cultured daily. An unfiltered and a filtered sample of milk serum (½ c.c—2 c.c) were injected subcutaneously into guinea pigs. The sample before being filtered was centrifugalized to remove the fat globules. On the second, fourth, and fifth days, the injection of the whole milk produced symptoms in guinea-pigs indistinguishable from chronic botulism, while the milk filtrate on the second day produced a similar syndrome. The presence of the spores of C. botulinum in milk from the anterior infected quarters was demonstrated on the first, second, third, fourth, fifth, sixth, eighth, ninth, thirteenth, sixteenth, twenty-sixth, and thirtieth days.

The preliminary findings suggest the possibility of intramammary production of minimum amounts of botulinus toxin as the result of an artificial spore infection of the udder. Furthermore, the toxicity of the milk, as shown by the illness induced in the calves, is very suggestive.† These animals (calves 1745A—1745B) became emaciated and showed marked signs of malnutrition, notwithstanding the fact that the quantity of milk was more than sufficient to sustain them. Calf 1745A succumbed on June 12, while calf 1745B succumbed on July 11. The bacteriologic findings confirmed the diagnosis of a chronic botulinus intoxication. Though these animals were subjected to stable infection it is believed the milk contamination furnished the major part of their exposure.

SUMMARY

Preliminary evidence herein reported suggests that C. botulinum may, under certain experimental conditions, gain entrance to the milk via the animal host. The negative results in examining milk from experimental animals during the

†The spore suspension originally used to infect the udder failed to induce illness when injected into guinea-pigs. A period of several days following exposure of guinea-pigs before illness is not necessarily suggestive of the infectivity of spores. Small amounts of toxin may prove fatal only after an interval which corresponds to the period of incubation of a bacterial infection. Free toxin was not, however, demonstrated in the sterile milk filtrate from an infected udder.

ten-day period preceding the feeding of toxin and spores obviously suggest that the avenues of invasion are related to the contaminated rations, while the part played by a contaminated soil or other extraneous fomites is not excluded.

The presence of the spore in fresh milk for immediate consumption is probably of no toxicogenic significance to the human family, if the negative results in guinea-pigs, following injection of fresh milk contaminated with spores, are a reliable guide. However, an experimental teat canal or udder infection was repeatedly transmitted in the milk, as demonstrated in guinea-pigs and possibly in calves. The production of minimum amounts of toxin in the udder could not, however, be demonstrated. The mammary secretion of an artificially infected udder proved positive to C. botulinum for several days, following the initial infection. The presence of free toxin in milk filtrate from an infected udder was suggested in only one instance. Repeated examinations failed to demonstrate free toxin in other milk samples from infected udders. In view of the negative results in guinea pigs, the possibility of C. botulinum toxin being excreted in the milk of lactating animals consuming contaminated feed is remote, though the contamination of milk from feces or other sources is not to be disregarded, since milk furnishes a favorable medium for the development of toxin *in vitro*.

□

DIAGNOSTIC CHEMISTRY AS A ROUTINE FUNCTION OF A STATE LABORATORY

STEPHEN DEM. GAGE and EDITH EARLE
State Board of Health, Providence, R. I.

Read before the Laboratory Section of the American Public Health Association at the Fiftieth Annual Meeting, New York City, November 15, 1921

FOR more than twenty years the place of the laboratory in the control of infectious diseases has been recognized. Today practically every state and large city, and numerous smaller communities, operate laboratories for the free diagnosis of diphtheria, tuberculosis, typhoid, and other infectious diseases. As serviceable methods for the diagnosis of other diseases have been developed the scope of many of these laboratories has been enlarged, and the field of the public health laboratory has come to include serology, histopathology, and cytology in addition to bacteriology. In the large majority of cases the main aim of these laboratories has been to assist in the diagnosis and control of contagious disease, and except in a relatively few instances no systematic attempt has been made to aid in the diagnosis and control of the so-called organic and similar non-contagious diseases.

The term "public health" today means more than the mere control or prevention of epidemics of contagious disease. It means the saving of the lives and the raising to a productive maturity of countless children who in former days were permitted to die. It means, or it should mean, the prolongation of life and of active service of thousands of men and women who even today are dying at the zenith of their usefulness through the inroads of the organic diseases. Modern medicine is becoming more and more a social service concerned as much with the prevention as with the treatment of disease. People of mature age are being urged that they be examined regularly in order that the development of organic disturbances may be detected in their early and most easily curable stages.

The human body may be likened to a chemical laboratory in which a wide variety of chemical reactions are taking

place, each one nicely balanced in its relation to other chemical reactions which must precede or follow it. The difference between health and disease, organically speaking, usually means that disease is the unbalancing of these reactions, and this unbalancing can most readily be detected by chemical examinations of the body fluids or excreta. The practicing physician recognizes this when he makes tests for albumin and sugar in urine as an aid in the diagnosis of nephritis and diabetes. The average physician, however, has neither the time, the facilities, nor the skill to make the more delicate quantitative examinations, which are of the utmost value in diagnosis and cure of diseases of this character. If the laboratory is to do its full part in promoting public health it must provide for the physician every possible aid, not only for the diagnosis, but also for the treatment of disease in the home as well as in the hospital.

WHAT OTHER STATES ARE DOING

Early in 1921 a questionnaire was sent out to all state health departments by a committee of the Conference of State and Provincial Health Officers requesting detailed information as to the character and scope of the laboratory service which they were providing for practicing physicians. Through the courtesy of Dr. B. U. Richards, Secretary of the Rhode Island State Board of Health and Chairman of that committee, we have been permitted to use some of the unpublished information obtained by his committee.

Of the thirty-three states from which replies were received, twenty-seven include some phase of diagnostic chemistry as a routine function of their laboratories. Eighteen of these state laboratories make examinations of urine, seventeen make examinations of feces, thirteen make examinations of breast milk, and twelve make examinations of gastric content. In only four states, Michigan, Delaware, Indiana, and Rhode Island, however, are the laboratories prepared to make approximately all of the chemical examinations of recognized diagnostic value, on all of these various classes of material.

With the increasing importance of blood chemistry in the diagnosis and treatment of disease, it seems most important for a diagnostic laboratory to be equipped for blood analysis. Yet only seven states out of thirty-three reported that they were prepared to make chemical analyses of blood and other body fluids. In nineteen states determinations of lead in water were made when required, but in the majority of cases these analyses were made only in connection with control of public water supplies in the water laboratories.

In fifteen of the eighteen states making diagnostic chemical analyses this service was free to physicians. In three states, North Dakota, Vermont and West Virginia, however, a fee of one to six dollars is charged for such examinations of this character as were made.

The following is a list of the tests on different classes of material considered of diagnostic value by practicing physicians, together with the number of states reporting that this test is made in their laboratories.

Urine: color—18 states; transparency—18; acidity—18; specific gravity—18; sugar (qualitative)—18; sugar (quantitative)—17; albumin (qualitative)—18; albumin (quantitative)—17; bile—14; urea—13; indican—14; acetone—13; diacetic acid—12; B-oxybutyric acid—10; total solids—8; chlorides—8; phosphates—9; sulphates—9; fat—5; blood—*; renal calculi—*; miscroscopic examination—15; diazo reaction—*; H-ion concentration—*; lead—6; arsenic—5; renal efficiency—3.

Blood: sugar—7 states; creatinine—7; uric acid—7; urea nitrogen—7; CO_2—consuming power—5; CO—hemoglobin—*; acetone-diacetic acid—6; B-oxybutyric acid—4; total nitrogen—4; nonprotein nitrogen—5; amino-acid nitrogen—4; ammonia nitrogen—5; total solids—5; creatine—5; cholesterol—4; calcium—*; fat—*; H-ion concentration—*.

*Statistics relating to this determination not asked in questionnaire.

Breast Milk: specific gravity—11 states; fats—13; solids—10; sugar—10; protein nitrogen—9; ash—9.

Feces: macroscopic examination—15 states; determination of fat (microscopic examination—8, chemical—6); undigested starch—12; blood—14; Kjeldahl nitrogen—5; bile acids—7; lead—5.

Gastric Contents: total acidity—11 states; free acidity—10; free HCl—10; combined acidity—11; lactic acid—11; blood—11; bile—11; microscopic examination—10; rennin—*; pepsin—*; H-ion concentration—*.

Body Fluids: specific gravity—7 states; sugar—6; albumin—7; mucin—6; globulin—*.

Water for Lead—19 states.

TABLE SHOWING THE NUMBER OF CHEMICAL DIAGNOSTIC TESTS ON DIFFERENT CLASSES OF MATERIAL MADE IN VARIOUS STATE LABORATORIES

Number of tests considered of diagnostic value	Urine 31	Blood 18	Feces 8	Gastric Content 10	Breast Milk 6	Fluids 5	Water for Lead 1	Total 79
Rhode Island	30	16	8	10	6	5	1	76
Michigan	27	13	7	8	6	4	1	66
Delaware	23	14	8	8	6	4	1	64
Indiana	27	13	8	5	6	4	1	64
Vermont	25	5	8	8	..	..	1	47
Texas	23	..	4	7	6	..	1	41
N. Dakota	15	4	4	8	5	2	..	38
D. of Columbia	21	..	4	8	..	4	..	37
New York	15	..	5	8	..	4	1	33
W. Virginia	13	..	3	8	6	..	..	30
Iowa	8	14	..	..	6	..	1	29
Louisiana	14	..	4	8	2	..	1	29
Alabama	21	..	1	1	..	..	1	24
Maine	13	..	1	..	6	..	1	21
Oregon	17	..	1	..	1	..	..	19
Arizona	9	..	4	..	1	..	..	14
Illinois	7	..	..	..	..	..	1	8
Kentucky	8	..	..	..	..	..	..	8
———*	..	..	..	..	5	..	1	6
California	..	..	..	..	..	..	1	1
Connecticut	..	..	..	..	..	..	1	1
Kansas	..	..	..	..	..	..	1	1
Maryland	..	..	..	..	..	..	1	1
Massachusetts	..	..	..	..	..	..	1	1
Missouri	..	..	1	..	..	..	..	1
New Hampshire	..	..	1	..	..	..	..	1
Virginia	..	..	..	..	..	..	1	1

*Reply to questionnaire received without name of state.

WHAT RHODE ISLAND IS DOING

Rhode Island was among the first, if not the first state, to offer free laboratory service to physicians in diagnosing disease. In 1894, the State Board of Health opened a laboratory for the free diagnosis of tuberculosis and diphtheria. The development of this service, and the growth of that little laboratory into the present laboratory of pathology and bacteriology is well known.

Realizing the value of chemical as well as bacteriological methods of diagnosis, the Board in 1917 established another laboratory especially equipped for diagnostic chemical analysis. For purely economic and administrative reasons this branch of the work has been centered in the chemical instead of in the pathological laboratory. However, these laboratories occupy adjoining quarters, and work in close coöperation.

The policy of the Board in the conduct of this laboratory as well as in the conduct of its pathological laboratory has been to offer to the practicing physician of the state every possible laboratory aid for prompt and accurate diagnosis, and to induce him to use the laboratory fully and freely by making it as easy as possible for him to do so.

If a laboratory of this kind is to accomplish the greatest amount of good it must be brought close to the people. In this respect Rhode Island has been an excellent field for the development of laboratory diagnostic service. Approximately 75 per cent of the population and a similar proportion of the physicians of the state are located within a twelve mile radius of the laboratory. For the convenience of physicians practicing within this area, a collecting station has been established in Providence where samples for analysis may be left at any time of day or night, and are delivered to the laboratory twice each day. For the benefit of physicians practicing in the northern part of the state, a second collecting station has been established at Woonsocket, near the center of population of this section. Samples left at this station are collected and brought to the laboratory each morning. It is the intention to establish similar collecting stations near other centers of population as soon as conditions will warrant, thus bringing the laboratory close to the people in every part of the state except the extreme rural districts.

As would naturally be expected a large proportion of the material submitted to the chemical laboratories by physicians for analysis consists of samples of urine, since this is the kind of chemical diagnostic work familiar to most physicians and utilized in their practice. The routine urinalysis as made in our laboratory includes color, transparency, reaction, specific gravity, determination of urea, tests for presence of sugar, albumin, indican, and bile, and a microscopical examination of the centrifuged sediment. When sugar or albumin are present quantitative determinations of the amount are made. Tests for acetone and diacetic acid are also made if the tests for sugar indicate that they may be present. All urine samples received before 4 p. m. are examined and a report on the analysis mailed to the physician before the laboratory is closed for the night, unless special tests are requested which require more time to complete. When requested results are reported by telephone as soon as completed.

In the case of samples of other material than urine, we have not found it advisable to establish a routine procedure, and on such samples we make only such examinations as the physician may request. Except in the case of blood samples we have not found it necessary or desirable to provide outfits for collecting and forwarding samples to the laboratory. Samples may be submitted in any kind of receptacle which the physician or patient may have available. The only restriction is that these receptacles must be of glass or porcelain, and that they must be tightly stoppered. For blood samples, however, we provide a special outfit with a sterilized wide-mouth jar containing the proper amount of potassium oxalate to prevent the blood from clotting, a sterilized Wassermann needle, and directions for drawing blood, all contained in a double mailing case.

The services of the laboratory are free to any physician in good standing registered in the state. That this service is considered of value is evident by the fact that 325 or nearly half of the physicians are using the laboratory more or less regularly, and is also shown in the rapidly growing number of samples submitted for examination. In 1918, the first full year after the laboratory was in operation, 3,745 samples were examined, in 1920, 8,908 samples were examined, while during the first ten months of 1921

almost 9,200 samples have been submitted. The total cost of this work during the calendar year 1920 was about $4,300, or slightly less than fifty cents for each sample submitted.

As the chemical examination of blood as a diagnostic procedure has been developed in comparatively recent years it has been found advisable to conduct a campaign to inform physicians as to its value, particularly in supplementing the urinalysis in certain cases. The extensive increase in the number of blood samples as well as in the number of physicians who are sending in such samples is an encouraging feature of the work of our laboratory.

For some years we have also been trying to focus the attention of the medical profession on the fact that there are possibly many unrecognized cases of mild lead poisoning in the state masquerading under other aliases, and that the laboratory could aid them in clearing up such cases. The result of this is reflected in the increasing number of determinations of lead in drinking water and in urine which we are called upon to make. Another interesting feature of the work of our laboratory is the fact that certain physicians are asking for the examination of urine samples for arsenic as an aid in controlling the treatment of syphilitic cases. We also encourage the physicians to come to the laboratory and let us help them with any problems associated with diagnostic chemistry which they may be unable to solve.

TABLE SHOWING GROWTH OF DIAGNOSTIC CHEMICAL WORK IN LABORATORY OF RHODE ISLAND STATE BOARD OF HEALTH

	Number of Samples Examined			
	1918	1919	1920	1921 (10 months)
Urine	3,674	6,234	8,736	8,938
Blood	18	43	84	135
Breast Milk	34	45	30	24
Gastric Content	5	7	9	15
Feces	3	19	31	35
Water for Lead	11	34	15	37
Miscellaneous	..	3	3	6
Total	3,745	6,435	8,908	9,190

PROPER CLEANSING OF GLASSWARE AND OTHER UTENSILS IN PUBLIC DRINKING PLACES

ANNA I. VAN SAUN, ADA W. BANCROFT and JAMES J. O'GORMAN
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THE common public drinking glass has been abolished in most wide-awake communities, and the more progressive public drinking places have adopted the further safeguard to the health of those who patronize them of proper cleansing of glasses and other containers used in the dispensing of various drinks. Many soda fountains and soft drink places, however, still cling to the old method of a dip into cold or nearly cold water, which is often too dirty to be described.

The possibility of transmission of the infectious agents of disease through imperfectly washed glasses is by no means remote. Many instances of infection of human beings by such means have occurred. Syphilis, tuberculosis, diphtheria, typhoid fever, septic sore throat, and

nearly all other communicable diseases may be so transmitted. In recognition of this fact, about two years ago Dr. Frank W. Wright, health officer of New Haven, drew up and presented to the Board of Aldermen an ordinance which was passed by them, relative to the proper cleaning of glassware and other containers used for the service of drinks to the public.

In a preliminary survey made by the food inspector, gross carelessness in the matter of washing such containers had been observed; therefore the health officer brought the matter to the attention of the Bureau of Laboratories, suggesting that an investigation be made of the methods used, with the object of formulating rules for the guidance of those dispensing drinks, since some difficulty had been experienced in selecting a method of sterilization which would produce the desired results without inflicting great expense and other hardships on owners of such establishments.*

The City ordinance reads as follows:

ORDINANCE CONCERNING STERILIZATION OF DRINKING CUPS, GLASSES AND OTHER CONTAINERS

Be it Ordained by the Board of Aldermen of the City of New Haven:

SECTION 1. It shall be unlawful for any person, firm or corporation maintaining a restaurant, lunch-room, saloon, soda-water fountain or other place where drinks of any description are sold, to dispense drinks from glasses, cups, or other containers, unless said glasses, cups, or containers have been sterilized after each serving by immersing in boiling water, subjecting to live steam† or some other method of sterilizing approved by the Board of Health.

SECTION 2. Any person, firm or other corporation violating any of the provisions of this ordinance shall, on conviction, be fined not less than five dollars for each and every offense.

Enacted by the Board of Aldermen, March 24, 1919.

Approved by the Mayor, March 26, 1919.

Operative and in effect April 2, 1919.

*A preliminary report of this work was published in the *Monthly Bulletin* of the Department of Health in May, 1919.

†These methods proved impractical, resulting in great destruction of glassware and cloudiness of that which survived.

In looking over the literature it was not found that much had been done on the subject under consideration.

The Department of Health of New York City, through the Bureau of Laboratories, in 1916 made a survey of the various methods of dish-washing obtaining in restaurants throughout the city. A number of experiments were performed by Manheimer and Ybanez[1]. They concluded that boiling water is necessary for sterilization.

A personal communication from Dr. Jane L. Berry of the Bureau of Laboratories, who had charge of an investigation of the methods of washing glassware and other containers in places which dispensed soda water (such as drug-stores, corner stands and push-carts), the results of which have not yet been published, gives some interesting findings in connection with the problem of disinfection of containers with chemical solutions. The Centadrink fountains had been using at that time a saturated solution of chloride of lime with which to disinfect their glasses, and this gave surprisingly good results. Not only did the saturated solution accomplish its purpose but she found that much weaker solutions could be used, and that disinfection was practically instantaneous in most instances. The washing of glassware with soap and water diminished the number of bacteria very markedly, but it was necessary to immerse the glasses in water at nearly boiling temperature to effect complete and instantaneous sterilization.

H. N. Cole[2] comes to the conclusion, as the result of a study of syphilitic infections, that boiling water is necessary for complete disinfection of glassware. He says: "There should be stringent laws, enforced by careful inspection, requiring the placing of all dishes, glassware, and silverware in boiling water for five minutes. This would effectively kill all organisms and fully protect us."

A survey of a series of representative hotels, restaurants, lunch and tea rooms,

ice cream parlors and soda fountains classed as excellent, good, fair and poor was taken as a basis for the work in New Haven. For this survey a card printed as follows was used.

The back of this card contained space for "remarks."

Type Place		Proprietor	Date
Containers	Method used	Wet	Dry
Soap powder	Kind	Hot water	Cold
Washed		"	"
Water heater	Type		Constant use / Occasional use
Chemical sol.	"		
Containers dried?	How?		
Effect of rush hours or days			
General score			

(OVER)

The preliminary survey of the situation in New Haven showed that two method existed for the washing of glassware in public drinking places—the "wet" and the "dry." The wet method on account of its simplicity is the one followed in the majority of the smaller places. As its name would indicate, it consists of serving the customer with a glass which has not been dried after having been more or less washed with any one of a variety of soap powders, in sometimes tepid but more often cold water, and sometimes without the formality of the use of a soap powder. In the dry method the glasses are washed in hot soap suds and thoroughly dried, either in a heater or sterilizer, or by hand with a towel. The wet method was followed in a fashionable candy shop and it never seemed to have occurred to the customers that they might demand more care in the serving of their orders. Mechanical dish washers were found only in a few large hotels and restaurants. These are not, as a general rule, used for the washing of glasses.

It was decided to experiment with eight different brands of soap powder, those found to be most generally in use. These were numbered from 1 to 8.* Since the majority of places using the soap powders were careless as to the preparation of the solutions, it seemed well to test these powders for their solubility in water at different temperatures, as the full effect of the powder cannot be obtained unless it is completely dissolved.

One of the chief difficulties which beset the owners of various drinking places was that of heating water. After some investigation it was found that the cheapest and most reliable method of accomplishing this would seem to be by means of any one of several makes of gas water heaters. The water supply of the laboratory is heated by one of these which is set to give a temperature of about 145° F. This temperature is much too hot for the hands to bear and should dissolve soap powder. Therefore samples were taken of the soap powders previously mentioned and a tablespoonful of each was dissolved in a separate two-

*Names of the powders may be obtained upon application to the Health Officer, Room 10, City Hall, New Haven, Conn.

quart container of water of the temperature above stated, save in the case of No. 7, where four times the amount was used, as the directions on the package called for that quantity.

Four of the samples dissolved rapidly, namely, Nos. 2, 4, 7 and 8, being completely dissolved within five minutes. Two of them, 5 and 6 respectively, were nearly dissolved, and No. 3, had a good deal of the powder undissolved at the end of five minutes. No. 1 was exceedingly difficult to dissolve unless actually boiled for a short period, and in our opinion should not be used where boiling water cannot be obtained. Tests were also made of the solubility of all the powders in cold water. Only one, soap powder 4, dissolved rapidly; 1, 2, and 3 with difficulty; 5, 6, and 8 fairly well, and 7 somewhat more rapidly.

Practically no bacteria were found in tests made of the hot soap solutions before they were used, with the exception of No. 1, which contained a few bacteria. It was found to be impractical on account of lack of time and assistance to take cultures from a large number of glasses in the shops. It was therefore decided to contaminate glasses artificially in the laboratory. For this work a laboratory stock culture of staphylococcus in broth was used. The thermal death-point of this organism is 140° F. The rims of rather thick tumblers were contaminated by means of rubbing with sterile swabs dipped in the broth culture. The glasses were allowed to dry, then a culture was taken with another sterile swab from the rim of each of the glasses, inoculated into agar, and poured plates made to determine the number of organisms living before the glasses were dipped in the soap solutions. The glasses were then immersed in the soap solutions and left there for three minutes and again tested for the presence of living bacteria, the temperature of the solutions then being about 113° F. The table shows the results obtained. A further test was made after the tumblers had been heated in the solutions to the temperature of the water heater, 145° F. Glasses dried by hand with a towel showed practically no bacteria.

It will be seen that the tests made before the glasses were washed showed living bacteria. Soap powders 1 and 7 reduced the bacteria to 50 per cent, soap powder 2, to 20 per cent, 3, to 45 per cent, 4 to 5 per cent, 5 to 1 per cent, 6 to 35 per cent and 8 to 15 per cent. . .

Since Dr. Berry in her work in New York had found the chloride of lime solution so efficient as a disinfectant, a saturated solution of it was tried in the New Haven experiments on contaminated glasses. The effects were all that she had claimed for it, disinfection being practically immediate.

The results of this investigation have shown an inclination on the part of the proprietors of public drinking-places to improve their methods and personnel. The better types of places have shown marked improvement, and the smaller places are using paper containers which are certainly more desirable than imperfectly cleansed glasses. At the present time a higher class of labor can be procured than at the time this work was done, with a consequent decided betterment of general conditions.

The chief difficulty in enforcing the law lies in the fact that New Haven has but one food inspector, whose time for this particular work is very limited.

CONCLUSIONS

1. Glasses used in public drinking places should be thoroughly washed in hot soap and water, rinsed in running hot water and dried before being used by another customer. The soap solution should be changed frequently.

2. Glasses cannot be properly washed in cold water.

3. Of the soap powders tested, those which dissolved most readily would seem to be safer to use in most instances than

TABLE SHOWING THE EFFECT OF COMMONLY USED CLEANING SOLUTIONS AT VARYING TEMPERATURES UPON THE "STERILIZATION" OF GLASSWARE

Cleaning Solutions		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9
Solubility	at 145° F. (heater temperature)	Difficult	Excellent	Fair	Excellent	Good	Good	Excellent	Excellent	Saturated solution of chloride of lime in cold water
	in cold water	Difficult	Difficult	Difficult	Excellent	Fair	Fair	Good	Fair	
TEST A Number of bacteria found in the cleaning solution before using.		All solutions were practically sterile								Sterile
TEST B Percentage of bacteria found before washing glasses which have been treated with pathogenic bacteria.		100%	100%	100%	100%	100%	100%	100%	100%	100%
TEST C Percentage of bacteria found on same glass after standing in solution for 3 minutes at 113° F, except No. 9 which was used cold.		50%	20%	45%	5%	1%	35%	50%	15%	Practically Sterile
TEST D Percentage of bacteria found on glasses treated as in "Test B" and then left in solution for 3 minutes at 145° F (heater temperature).		.01%	.01%	.01%	Practically Sterile		.01%	.01%	.01%	

those which are difficult to dissolve, since the full benefit of a soap powder cannot be obtained unless it is entirely in solution.

4. A saturated solution of chloride of lime will instantaneously disinfect glasses placed therein.

RECOMMENDATIONS

1. Wherever possible, hot water of a temperature of at least 145° F., in which a sufficient quantity of an easily dissolved soap powder has been placed should be used for the washing of glasses or other containers, which should be entirely submerged in the solution and left there for at least three minutes.

2. For places not equipped for washing glasses with hot water the saturated solution of chloride of lime is suggested. Glasses disinfected with this solution should, of course, be thoroughly rinsed.

3. Glasses should be thoroughly dried. Experiments have shown that clean, dry glasses do not usually harbor bacteria.

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2. Cole, H. N., *Jour Am. Med. Assn.* 1916, No. 25, p. 1805.

Make your plans now for attending the Cleveland meeting, October 16-19. Details in next issue of JOURNAL.

SOME FUNDAMENTALS IN WORLD HEALTH WORK*

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THE outlines of a world-wide campaign for health are beginning to emerge. There are working agreements among governments. The Health Committee of the League of Nations, the League of Red Cross Societies, international scientific bodies, the International Health Board are in the field. The scientific research workers in many national centers are in constant communication. Knowledge is being applied more effectively to the problems in the field, and information about methods and results is being disseminated more systematically and rapidly.

Governments are sending attachés of hygiene into each other's territories. Vital statistics on an international scale are being reported more accurately. Prompt notification of epidemics is being facilitated. Outposts against plague and other diseases are being stationed and supported. The League of Nations' Committee has organized a barrier against typhus for the protection of Western Europe and the United States.

Leaders and technical experts are in training in larger numbers and under more favorable conditions. Underlying medical training is being improved, and schools of hygiene are being established in Baltimore, Boston, London, Prague, Warsaw, Calcutta, and elsewhere.

A committee of the League of Nations is attempting to standardize internationally vaccines and sera which now vary widely in potency and purity from nation to nation and even within the same country. Popular knowledge about preventive medicine and personal hygiene is increasing. Intercommunications of many kinds are being improved and multiplied.

It is more and more evident that curative and preventive medicine are two aspects of the same thing. Emphasis shifts from care of the sick to the avoidance of sickness. The doctor of the future will be more useful as a periodic examiner and health counselor than as an emergency man called in after disease has made serious progress. Curative medicine deals with the individual patient; preventive medicine concerns itself with communities, states, nations, the world.

Public health is primarily a governmental responsibility. Private health agencies may aid governments, but should not seek to serve as substitutes for them. Private health associations may render important service in conducting experiments and demonstrations, in coöperating with public authorities, and in organizing popular support for government policies.

There is an order of importance in public-health projects. Fundamental things like sanitation and control of epidemics should not be neglected for more spectacular and emotionally appealing activities. There should be constant appraisal and readjustment of public health work in the light of world experience. Here as in every other field there is danger of waste of money and effort.

A fundamental theory to guide health policies is lacking. On the one hand extremists welcome disease and even vice as essential means of weeding out the weak and unfit. On the other, it is affirmed that all individual lives and all races are to be regarded by health organizations as equally valuable. Probably no philosophy of preventive medicine can ever be agreed upon, but the problems involved cannot be ignored. Manifold world-wide contacts and interdependencies make the health of each in some sense the concern of all.

*Abstract of an address delivered before the National Conference of Social Work, Providence, Rhode Island, June 24, 1922.

PUBLIC HEALTH NURSING SERVICE IN A STATE DEPARTMENT OF HEALTH

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ONE of the many perplexing problems in state health administration has been the proper coördination of the work performed by public-health nurses. Their field of service is so new, so constantly enlarging in its scope, and so rapidly undergoing changes in emphasis, that any discussion of the problem, to say nothing of a solution, has been well-nigh fruitless.

Are we beginning to see a solution of the problem? It is perhaps significant that the subject recently received attention simultaneously in two journals of national authority within the same month. Dr. Allen W. Freeman, lecturer on public-health administration at Johns Hopkins University, and formerly commissioner of health of Ohio, set forth the "Organization of Public Health Nursing in the State Board of Health" in the March, 1922 issue of *The Public Health Nurse*. Miss Rose M. Ehrenfeld, R. N., director of the bureau of public-health nursing and infant hygiene in the State Board of Health of North Carolina, had a paper on "The Relation of Public Health Nursing to other Phases of Work of the State Board of Health with Special Reference to That of the Division of Child Hygiene" in the March, 1922 issue of the AMERICAN JOURNAL OF PUBLIC HEALTH.

Thus, we have the problem discussed by two public-health workers possessing intimate first-hand knowledge of the subject. The one approaches the problem from the medical (for want of a better term) point of view; the other from the nursing (again for want of a better term) point of view. Recognizing the administrative problem involved, each endeavors to reach a solution from a different standpoint. Both agree upon the organization of the public-health nursing service as an independent bureau or division in the state department of health. Both insist upon the necessity of having a well-trained, experienced public-health nurse in charge of such bureau or division, reporting directly to the chief executive officer of the state department of health. Their agreement does not seem to be so clear about the detail content of the work to be performed by the public-health nurse. This lack of agreement appears to center around the difficulties in harmonizing the program of public-health nursing and child hygiene.

In this connection, an earlier attempt to harmonize the functions of a state department of health was made by Miss Jessie L. Marriner* in a very suggestive analysis of the work of the various bureaus established by a state department of health. Here the approach to the problem is upon the basis of function. Other attempts have been made to analyze the problem on the basis of organizing the type of workers. If the organization of a division of public-health nursing is to be justified upon the basis of function or type of worker, we believe it would be difficult to sustain the justification in the face of severe competition. However, the establishment of a division of public-health nursing can be easily justified on the basis of method of work. We believe the phenomenal growth in public-health nursing is to be attributed not to the functions performed nor the particular type of worker, but to the method of work employed in the functions performed by the particular type of worker.

*Marriner, Jessie L. "Functions and Relationships of Bureaus of Child Hygiene and Bureaus of Public Health Nursing in State Boards of Health." *American Journal of Public Health*, August, 1921, pp. 707-711.

There was a time, not so many years ago, in the organization of a state department of health when the routine of daily work could be easily performed by divisions of administration, vital statistics, sanitary engineering, laboratory and communicable diseases. Each of these divisions, as its name implies, had a definite field of service to cover which conflicted in no way with that of any other division. These divisions were also in charge of persons who either had definite training for their work or had gained such knowledge through experience. Furthermore, and most important of all, each of these divisions had a definite method in approaching its field of service. Thus, the administrative task of coördinating the work of these divisions toward the end in view, namely, reducing the mortality and the morbidity rates, became simply the problem of securing the coöperation of the personnel of the various divisions.

Suddenly all of this was changed. There broke into view a region, unknown and unexplored, which in order to be reached seemed to require the addition of new divisions, new personnel, and new methods. We see, therefore, a rapid extension of the organization of state departments of health by the creation of divisions of tuberculosis, education, publicity, public-health nursing, child hygiene, industrial hygiene, and social hygiene. As a result of the advent of these divisions of work we meet with a host of new workers—doctors, nurses, teachers, social workers, publicity workers, business men and women, ministers, and lawyers; and finally, in addition to new divisions and new personnel, there came a new method of approach to the public-health problem, which used education as its main instrument.

Public-health administrators were not prepared to meet the new situation. There was no previous experience upon which to draw, no clear-cut theory upon which to work, and the only thing to do was to grope slowly toward the light. Varied attempts to meet the problem brought forth some startling results. The absurdity of some of the results can be seen at a glance when alongside of divisions of administration based upon business methods, of communicable diseases based upon methods of epidemiology, of sanitary engineering based upon engineering methods, of laboratories based upon laboratory methods, of vital statistics based upon statistical methods, there is placed a division of hygiene based upon no method at all, and which is organized under the direction of one individual, to include bureaus of tuberculosis, child hygiene, venereal diseases, hospitals, prevention of blindness, and public-health nursing. What progress could we expect to see developed out of such a "grab-bag" of a division?

Another difficulty arose in the competitive struggle to develop a local field service by each of these bureaus within the same division. The limitations of finances alone, not to consider any other limitations, make it clearly out of the question to endeavor to build up a specialized local field service to carry out the programs of these specially created bureaus. No such difficulties had been experienced earlier because each of the divisions had its own service, personnel, and methods, and each one could accomplish its results through the local health officer without feeling the need for additional local workers with special training.

Need one be surprised if the administrative problems became so complex as almost to defy solution? Gradually, some system began to appear out of the seeming chaos. There began to be recognized two phases of the educational process—the education of the individual and the education of the mass. Accordingly, the selective process brought two groups of workers to the fore—public-health nurses upon whom was placed dependence to carry on effectively the education of the individual in the home, and publicity

specialists or educators to carry on the mass education. State and local departments of health began to employ public-health nurses in large numbers; divisions of public-health nursing were organized, and standards relating to education, training, type of work, methods of work, records, salaries, and hours, were gradually evolved.

Some system began to take shape in the state program. It was beginning to be realized that to the health officer, representative of the remedial type of health work, had been added another worker, the public-health nurse, representative of the preventive type of health work. Both came in contact with the individual and the family in the home, but each with a different approach.

It was seen that dependence must be placed by the state health department upon the local health officer and the local public-health nurse in carrying out any state-wide program, no matter what its specialized field might be. And so, all of the special phases of public-health work which make use of the education of the individual in the home as their method must be so organized in the state department of health as to function smoothly through the local public-health nursing service.

We believe a division of public-health nursing in a state department of health has two main responsibilities. The first is to the local public-health nurse employed in the municipality or the county. The second is to provide service to the other divisions in the department where the nature of the work is dependent upon public-health nurses for its satisfactory accomplishment. These two responsibilities are quite different in character, and it is the failure to distinguish properly between them that has caused so much of the administrative difficulty.

However, it must not be forgotten that the public-health nursing service is only a part of the whole public-health administration, and that the public-health nurses, whether employed by the state or by the local department of health, must formulate their programs and perform their daily services in the closest possible coöperation with the programs and services in the other fields of public-health administration.

Public-health nursing service in a state department of health should be organized as a major division on a basis of equality with all other major divisions. There should be a well-trained and qualified public-health nurse in charge of the work, with such assistants as are necessary for the volume of work to be performed. The division should have at least four subordinate bureaus, each in charge of an experienced public-health nurse, to carry out the essential present-day functions of such a division. These bureaus are (1) development and placement, (2) record, (3) consultant, and (4) service.

1. The development and placement bureau should be engaged in three primary activities. It should be the means by which local fields of public-health nursing are developed as rapidly as experience shows the value of such service in meeting public-health problems. It should be engaged in recruiting pupils for schools of nursing and in recruiting nurses for public-health nursing work. It should be engaged in securing competent public-health nurses to fill new positions and vacancies in the state and local health organizations.

2. The record bureau should be engaged in keeping and in developing all records found to be necessary in the public-health nursing service, either in the state or local work. A regular and systematic scheme of reporting from the local to the state and from the state to the local nurses should be established.

3. The consultant bureau should have a staff of experienced public-health nurses placed in districts to render a consulting service to all local public-health nurses. Such consultant nurses should have districts of such size that they can

visit each nursing center at least every two months on a regular schedule.

4. The service bureau should have a staff of public-health nurses who have had specialized experience and training in tuberculosis, child hygiene, social hygiene, prevention of blindness, mental hygiene, school hygiene, and other special health problems, to work in close coöperation with such major divisions or bureaus as may be in the state organization which demand such service as a part of the successful operation of their program.

At the present time no such organization has been built up in the United States, and yet we witness the daily endeavor of a handful of public-health nurses in a state department of health to render each of these services. Until all of these services can be properly provided, a policy which is founded upon the theoretical basis of the specialized hygienes should not be adopted. All of these are undoubtedly necessary, but they should take their place in the state program only when provision has been made for properly administering them. The staff of a state department of health must work for and through the local department of health. Any state program which does not take this fact as its major premise will lead to confusion. The methods of working for and through the local health commissioner are fairly well established. Such is not the case with the methods of working for and through the local public-health nurse. It is at this point that we need to concentrate. When there comes some semblance of method in applying the preventive principle of education to the individual in the home, then many of the present-day administrative difficulties will disappear.

PUBLIC HEALTH CONSERVED THROUGH THE ENFORCEMENT OF POSTAL FRAUD LAWS

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Read before the Food and Drugs Section of the American Public Health Association at the Fiftieth Annual Meeting, New York City, November 18, 1921

THE use of the mails is a privilege granted by the government to all parties residing within the United States. This privilege may be withdrawn for cause. Congress has passed laws directing what is and what is not mailable. These laws are supplemented by regulations that have the force and effect of law until set aside by the courts. The Postmaster General is directed to enforce these laws and is given certain discretionary power. In case of fraud order procedure this official may, upon evidence satisfactory to himself that any person or company is engaged in conducting a scheme or device for obtaining money through the mails by means of false and fraudulent pretenses, representations, and promises, withdraw the privileges of the mails from such parties. This means that the person or company is enjoined from receiving any further mail addressed to such person or company and all registered letters so addressed are marked "fraudulent" and returned to the original senders.

The hearings are conducted in the same manner as are court cases, excepting that there is less formality in presenting the evidence, and the testimony is not given under oath. There is great flexibility. The defendant is permitted

to present anything that he thinks advantageous to his case. A fraud order is not always issued, even though his business is shown to be a scheme to defraud. If the Postmaster General finds mitigating circumstances he may, and often does, accept an affidavit from the offender agreeing to discontinue the business immediately or after a stipulated time. Another alternative is at times asked for and granted, namely, a revision of the business in such a manner as to eliminate all fraudulent elements.

These laws stand between schemers and the public. Their enforcement covers legions of schemes to separate the people from their money. The fraud law denying the privileges of the mails, and its companion penal statute covering the same elements, save the patrons of the United States mails millions of dollars annually. It is under these two laws that medical schemes and frauds using the mails are reached. The writer has been identified with the enforcement of these laws since 1903, covering not only medical schemes but other schemes requiring expert knowledge, such as adulterations and misbrandings of all kinds, particularly foods and drugs and allied commodities. During this time there have been developed definite methods of procedure and precedents based largely on court decisions. These laws, as in the case with other stringent laws, have encountered their share of violent and powerful opposition. Their basic principles are, however, now thoroughly established by numerous federal court decisions.

This contribution aims to deal with general schemes for the treatment of tuberculosis, cancer, habit - forming agents, and syphilis, which jeopardize public health. The monetary side, which in the final analysis is the prime object of the promoters of these activities, will receive little consideration.

Among the first medical products actively considered during the writer's connection with the post office work were the alleged consumption cures. Investigations were made and reports submitted by various post office inspectors. These earlier investigations and reports were not as thorough as at the present day, either as to the chemical examinations or the medical questions involved, nor was it necessary, because the schemes were much cruder than they are at present. In order to secure evidence that the mails are being used for carrying out any line of promotion, it is necessary for an inspector to enter into correspondence with the business as a regular corespondent, and thus procure through the mails the actual material that is in use, and information as to the manner in which the business is conducted. This is necessary for the reason that the mails are secret. One can sit down in his own home or place of business, put his inmost secrets or private business propositions, involving thousands of dollars, into an envelope and send them to any part of the United States through the mails, with the utmost assurance that the material will be delivered to the party for whom it is intended. The laws of the government insure this privacy to every citizen or sojourner who uses the mails. This privilege is strictly guarded by the postal inspection service and is accorded to any citizen regardless of character. Because of this privacy the mails lend themselves readily to any form of imposition on the public involving either money or health. The Postmaster General and his agents are specifically forbidden to open any letter, even though they are positive that certain mail matter contains material which is forbidden by law to be placed in the mails. It is for this reason that the plan of correspondence outlined above must be resorted to. Many of the cases are initiated on complains which result in an investigation and a report by a post office inspector either to a local district attorney recommending proceedings under the criminal law, or to the chief

post office inspector or the solicitor of the department. If the reviewing officer is satisfied that fraud or crime is revealed by the report, suitable action is taken to punish the offender.

Tuberculosis is the opportunity par excellence for deceiving the unfortunates, taking away their money, and depriving them of proper treatment at a time when the opportunities for regaining health are the best. The alleged consumption cures cannot be considered other than as public menaces. Though the medical profession and many laymen are satisfied on this point, it is not such a simple matter to convince a jury or a judge sitting in the case that a given product is a fraud, particularly in view of the fact that medical men themselves have often advocated the use of certain drugs for the treatment of tuberculosis. There were literally scores of drug mixtures advertised for curing consumption twenty years ago. Many of them have ceased to appear, but there are still a fair number of drug treatments exploited.

"Tuberculozyne" was one of the first of these preparations to receive consideration at the hands of the post office department. It contained heroin and certain other ingredients, among them an organic copper compound. At the hearing of this case the medical experts for the government testified that they knew of no drug which would be efficacious in curing tuberculosis. The defendant, however, put in the record some experiments that were made by European physicians and reported that the organic copper compound was a cure for tuberculosis. After the evidence was completed, the question of issuing a fraud order came up for final consideration. The judge said, in substance, that he did not see how it would be possible for him to recommend the issuing of a fraud order in this case, in view of the fact that the defendant produced evidence of a medical nature which showed that this organic copper compound was efficacious as a cure for tuberculosis. While he recognized the existence of different degrees of ability or standing of medical men, it was incumbent upon him, unless shown to the contrary, to give all medical evidence, printed or otherwise, the same consideration, and under the circumstances he did not feel justified in recommending the issuance of a fraud order. No fraud order was issued, which was rather a disappointment, and indicated the difficulties to be surmounted, because it was well recognized that favorable reports could be found for many substances as being efficacious for the treatment of this disease. Reports came in from different inspectors on alleged consumption cures, and different inspectors reporting on the same preparation often presented different angles.

It frequently happens that there are non-medical elements involved in these cases embodying fraud, concerning which there can be no doubt. Certain persons promoting such preparations were cited to show cause why fraud orders should not be issued. Not only were fraud orders issued covering some of these products but those behind these schemes began to realize that the use of the mails is being slowly but definitely withdrawn from them, and that it would be only a matter of time when it would be necessary to abandon the mails voluntarily or be prepared to accept a fraud order sooner or later. Some discontinued using the mails, disposed of their wares through drug stores and through demands created by newspaper advertising, which sort of advertising is not prohibited the use of the mails as the laws are construed at present.

The situation at this writing is that the number of alleged consumption cures being promoted through the use of the mails has been materially reduced. There is nothing new or novel in the mixtures used as the basis of the propaganda. The drugs are usually well known except in cases where the product is supposed to be the discovery of some missionary, ex-

plorer or doctor, or has some mysterious properties resulting from certain mixtures. The habit-forming drugs of the opium type, of course, are gone. Expectorants, tonics, laxatives, and alleged germicides cover the entire list. Among some of the drugs used may be mentioned terebene, the iodides, sulphurous acid, sulphur dioxide gas, eucalyptus oil, pine oils, ammonium chloride in vapor and solid forms, emulsions, and all forms and characters of tonics and laxatives.

The treating and curing of tuberculosis is frequently a side issue of some product exploited for another condition, syphilis for example. With the precedents already established, the time is near at hand when the bombardment of the unfortunate consumptive with deceptive advertisements will cease, thus giving him a chance to be returned to strength and health under proper treatment.

The alleged cancer cures received attention at an early date. One of the first of this line considered was "Radol," a hydroalcoholic liquid alleged to be rendered radioactive. In this instance the question did not devolve on the curative effect or otherwise of radium or radium emanations for the treatment or cure of cancer. It was simply a question as to whether or not the product did, or did not contain any material derived from radium. The facts were that the preparation did not contain any more radioactivity than ordinary Potomac River water. A fluorescence was imparted to the mixture by the addition of a small amount of an acidulated solution of quinine sulphate. Thousands of testimonials from lay users and some affidavits from medical men were put in evidence showing that the preparation did cure cancer. A fraud order however was issued.

With this case disposed of, investigations were made and reports submitted to the postal authorities regarding other alleged cancer cures. It was clearly shown by the evidence adduced by the government that the treatment of cancer by mail was a fraudulent practice pure and simple, and that the practice simply means taking away the last vestige of hope from the persons induced to try the treatments. In every case cited either a fraud order was issued, or the business discontinued on affidavit to quit the mails. The unfortunate part of discontinuing the use of the mails on affidavit is that no publication can be given the matter. It remains secret with the Department. The cancer cure business was practically broken up so far as the use of the mails was concerned in a short time. Of recent date it has been noted that several cancer cure firms are using the mails, but it is not believed that these lines of endeavor will continue very long after they are brought to the attention of the postal authorities.

After the enactment of the Food and Drugs Act, evidence began to be accumulated showing that the so-called drug habit treatments contained the very drug of which the promoters claimed to cure the unfortunate addict. The manner in which they were exploited clearly showed that these treatments were frauds of the most sinister type. A number of them were reported under the Food and Drugs Act, but the sending of the material to the consumer made it difficult to bring cases under this law, and furthermore the courts did not seem to be very sympathetic with the idea of bringing cases under that law on what were termed "induced shipments." The situation was finally successfully handled through action of the postal authorities. The procedure involving the mails covered not only issuing of fraud orders, but prosecution under the penal statutes for devising schemes to defraud, and sending poisons through the mail. The promoters of the drug known as "Habitina," containing both morphine and heroin, were in court and found guilty of both fraud and sending poisons through the mails. The two defendants were each sentenced to seven years in the penitentiary and to

pay a fine of $2,000. This drastic court action had a very wholesome effect upon users of the mails for promoting such treatments. It should be stated, however, that morphine is still surreptitiously sent through the mails. The post office department has just unearthed a case where a number of large cubes of morphine hydrochloride were sent through the mails to supply an addict. This is a penal offense and the sender, if found, is liable to serve a term in the penitentiary.

During and subsequent to the war much attention was given to the so-called syphilis cures and treatments, many of which had been on the market for years. The mercurial treatments with or without the iodides have been recognized as of signal service in combating this disease. It was only after the advent of salvarsan that this disease received the systematic study which finally placed its treatment on a satisfactory basis. It is well recognized that patients suffering with syphilis are very much disinclined to use the mercurial treatment over a sufficient length of time to eradicate the disease, and furthermore the layman is unable to determine when he is or is not free of the infection, whatever may be the nature of the treatment. It is also certain that the layman is not qualified to use the injection treatment of salvarsan. We therefore have very direct lines of attack on the alleged syphilis cures.

Syphilis treatments in general possess some tonic and laxative properties. A few contain small doses of potassium iodide and corrosive sublimate. The claims made for the drugs are remarkably strong, based largely on early medical literature and testimonials. It was thought by some early observers, and so stated in the literature, that the product known as Stillingia compound was efficacious for the treatment of this disease, but it has been proven of recent years that this mixture is of no value as a curative agent for syphilis. The originators of these treatments are generally laymen but, sad to relate, medical men are sometimes involved in the business.

At this point it may be well to note that there is no product so worthless, no representation so far from the truth, but some medical man somewhere may be found who is willing to testify in support of the business. It is true that in many instances these medical men on cross examinations make good witnesses for the government, much to the chagrin of the defendants. It is not believed that these medical men deliberately testify to falsehoods, but one can not escape the conviction that either they themselves are being duped or they have some ulterior motive. Some of the medical men who testify in behalf of the promoters who are cited to show cause why a fraud order should not be issued against the business, are woefully ignorant of modern medicine.

A professor of one of the leading Hahnemann schools and a member of a pharmacopeial committee of revision testified in favor of what the writer believes to have been one of the grossest impositions that has ever been perpetrated on the public. It is quite certain that he would not be pleased to have his name made public in connection therewith, but such action would certainly have a wholesome effect regarding medical men actually supporting some of these impositions. The scheme in behalf of which the professor testified was shown to be so grossly fraudulent that the promoter voluntarily agreed to withdraw from the use of the mails, and sell his commodities through regular drug trade channels.

Most of the testimonials from laymen now met with are genuine. Formerly this was not the case, and even at the present time many are secured under conditions that are, to say the least, unworthy. For example, during the war a preparation containing iron featured this

fact very prominently, calling attention to the need of iron men to save humanity. The testimonial of an aged general of the United States Army was used. The writer interviewed the general on an invalid's bed and he was good enough to tell the story of the testimonial, which is in substance as follows: "A friend of mine came to me and said that he had a medicine which he believed would do me great good, and placed a package of it at my disposal. I took one tablet. It seemed to do me good. A few days later he called on me, and after a short conversation I signed a testimonial, because I believed in iron as medicine." The good general was asked, whether he would recognize his friend's name and he said he would. On mentioning the gentleman's name, he identified it as that of his friend. It may be interesting to note that this gentleman was very active in Washington, and secured in similar ways other testimonials of prominent Washington men, which testimonials were largely used to exploit a very much advertised drug. A physician, and at one time an assistant postmaster general, also gave a testimonial, whether under similar circumstances was not ascertained, because, when the matter was brought to his attention he became angry and refused to discuss his connection with it, but to the writer's knowledge his testimonial did not appear in the public press thereafter.

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HEALTH BOOKEEPING IN THE HARLEM HEALTH CENTER

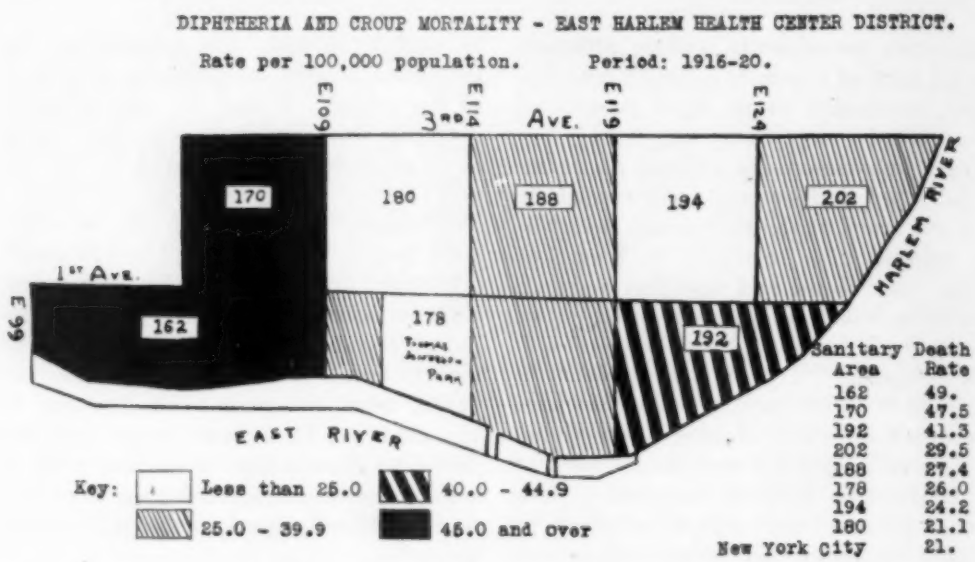
MYRA M. HULST

Statistician, East Harlem Health Center, New York City

THE system of health bookkeeping, as it has been aptly called, which is presented in this article, was planned and applied in the East Harlem Health Center, 345 East 116th Street, New York City. The Center was organized as a national health center demonstration by the American Red Cross, New York County Chapter; the New York City Department of Health, and twenty other agencies, all coöperating under one roof. From the very beginning, it was planned to work out a complete system of records, and if these worked successfully, to make them available to other institutions. Health centers are being widely established in this country and form an increasingly prominent part in the public-health movement, but there is as yet no plan for recording their activities in any comparable manner. This paper is offered as a basis for discussion in the hope that there may result therefrom a standard and comparable system of records for health centers.

The health bookkeeping here described has been carried on with the advice of the Health Center's director, Kenneth D. Widdemer, and of an advisory statistical committee of which Dr. Louis I. Dublin is chairman. Other members of the committee are Bailey B. Burritt, Dr. William H. Guilfoy, Dr. Louis I. Harris, Dr. Philip Van Ingen, and Professor Robert E. Chaddock.

An important part of statistical work in health centers is the collection and interpretation of the vital statistics of the community. It will mean a great saving in health centers' work to show and to be able to apply facts about the relative importance of different causes of sickness and death in the community and subdivisions of its territory. In this way the health center is aware of the most serious causes of ill health against which there exists most urgent need to concentrate efforts for prevention. The death-rates for the following diseases have been secured from the



City Department of Health records for East Harlem for a five-year period previous to the opening of the center: typhoid, measles, scarlet fever, whooping cough, diphtheria and croup, influenza, cancer, poliomyelitis, organic heart disease, pneumonia, diarrhea and enteritis, Bright's disease, puerperal causes, accidents, and all other causes. These rates have been analyzed to show areas within the district where there are special disease problems. A comparison has been made of the rates for the district with those of the city as a whole; in smaller communities the rates can be compared with the average for similar types of communities. These statistics have been presented in a small leaflet and made available to organizations cooperating in the Health Center's work A series of maps of the district presenting these conditions in graphic form accompany the leaflet. The maps are shaded to show the relative prevalence of certain causes of deaths in the different areas of the district. (See illustrated map on diphtheria.)

A nursing organization of long standing in the district found on relating these figures on prevalence of disease to the amount of work done, that the area with the very highest death-rates was the district from which they had drawn the fewest of their cases. The result of such a revelation was that this organization added two nurses to this area and special educational and nursing work was started there.

In establishing a well-rounded program of infant welfare work, the health center should know the trend of infant mortality over a period of years. The infant mortality rates in East Harlem for a five-year period previous to the opening of the center were secured, and an analysis made of infant mortality by the principal causes of death. It was found that the outstanding causes of infant mortality were diarrheal diseases and pneumonia, and that such conditions as congenital diseases and infectious diseases were comparatively low. Stimulated by these facts, additional work and special educational activities have been started to bring down these high death-rates during the season of the year when these particular causes are at their height.

The population by age groups for the district and its areas has been obtained from the last census. The population figures according to the following age groups are available: under 1 year, (also under 2 years for infant welfare work),

1-4 years, 5-9 years, 10-14, (also 6-16 years for school age), 15-19, 20-44, 45 and over. In starting a program for pre-school children these figures were used to show the number of children in this group in the district. It is important to know the distribution by nationality in a district like the East Harlem where 44 per cent of the population have been born in a foreign country and another 47 per cent are of foreign parentage, one or both parents having been born abroad. The area which has the highest tuberculosis rate in East Harlem has also the largest proportion of Irish and colored population.

Such statistics as have been described above have served the Health Center very effectively in the promotion of different activities. This has been especially true in the promotion of its educational program. The presentation of these facts has aroused the leaders of the community and organizations interested in public welfare, such as churches, settlements, and schools, and has brought to them a realization of the health needs of their community. These organizations, awakened to preventable diseases and deaths occurring among them, are inviting and promoting health classes, lectures, and talks, which are reaching an increasingly large proportion of the people.

A second part of the statistical work of the center is the record- and report-making. The work on record forms and the statistical system fortunately was begun during a period previous to the opening of the East Harlem Health Center. During this preliminary period the records and reports of other existing health centers were studied, together with those of all organizations that were to become a part of the Center. In making up the forms here described the aim has been to select and use only the more comparable and standard items of information. As many as possible of these items have been taken from existing records and reports, and an effort has been made to select those most important for the accounting of the Health Center activities and to simplify the whole rather than to add new material. This system by which the Health Center statistics have been gathered and tabulated has stood the test of time and actual working. It has been found to make available in a systematic and orderly way a large body of important facts about the Health Center's activities.

Direction Slip—The first form in the series is the direction slip (Form No. 1). This is filled out and given to each applicant at the information desk by the information clerk or telephone operator. Such registration brings about orderliness in the Health Center and facilitates finding the right service. Every one, with the exception of those attending regular classes and lectures, comes to the information desk. Here the needs of the individual are found out and he receives a direction slip to the proper service. These slips are made up in small pads with every other slip for a carbon duplicate on a different colored paper. The slips are also numbered consecutively thus showing the number of visits made to the Center; for example, a slip numbered 6000 would represent the six-thousandth call for service to the Health Center. This consecutive numbering of the slips makes it possible to calculate at any time about how many visits have been made to the Health Center to date. The slips also contain abbreviations which represent all agencies and services in the Center, and those to which the person is directed are checked at the desk. In cases where an agency has several different services, numbers have been used to represent them; for example: A. R. C.—1, 2, 3, 4, 5, stands for American Red Cross, 1. Nutrition Clinic, 2. Oral Hygiene, 3. Dental Operative, 4 and 5. blank for new services which may be added.

7943

Name Carmela Lucia

Room No. No.

~~D. of H. P. D.~~
1 2 3 4
N.C. D. of H., C. H.
(New Case) 1 2 3 4
M. C. A.
H. S. S.
Cardiac Cl.
Psych. Cl.
Gen. Med. Cl.
O. Therapy S.

Date 4/11/22

Address 324 E. 115 St. Fl. 4

Room No. No.

A. R. C.
1 2 3 4 5
A. I. C. P.
U. H. C.
~~C. O. S.~~ A3794 (Case
C. C. number)
A. S. H. A.
A. A. C. C.
N. Y. TB. A.

FORM NO. 1 (DIRECTION SLIP)

The applicant receiving the direction slip presents it to the agencies to be visited as indicated thereon, the duplicate being retained at the information desk. In case the agency finds that the person has been misdirected, this is noted on the slip by the agency and the redirection given. Very often the client, because of requiring different kinds of service or treatment, may be referred from one agency to another during the same Health Center visit. This can be noted by the agency without the applicant's return to the information desk. Case numbers are written on the slips by agencies using such numbers and the direction slips collected during the day are returned to the information desk.

Day Book and Tabulation.—Directors of health centers and those interested in promoting their activities will want to know to what extent the various services are being used by the community. A very important index of the usefulness of the activities is the record of attendance. The basis for taking the attendance is the daily direction slip. These are counted each day to find out the total attendance at the Health Center. The daily record can be readily calculated by taking the last number of the preceding day's slips and subtracting it from the last number of the current day's slips, and adding to this the attendance at classes and lectures, etc., to which direction slips are not given. A count can also be taken from the slips of the number of persons receiving service from each of the different agencies. A convenient form in which to keep a classified record of the daily attendance has been found to be the day book (Form No. 2), which, as used in the East Harlem Health Center, is a large loose-leaf note book with columnar ruled pages. The daily entries are made in this book and it forms a convenient reference, which shows at any time how each service is progressing in the number of calls that are coming to it. Although the day book is an elementary form of record, it is valuable in that it indicates the progress from time to time in each service; and the calls received can readily be compared in corresponding weeks or months. In this way decreases or increases will show up in the Health Center's activities, and the director can ascertain at a glance the weaknesses in the services.

The activities in the Health Center have been divided into four different

FORM NO. 2 (CONDENSED FROM DAY BOOK)

SERVICE VISITS MADE TO EAST HARLEM HEALTH CENTER

Month of.....192....

Date	Total Visits to H. C.	CLINICS				NURSING			Family Welfare		EDUCATIONAL		
		Total Clinic Visits	Cardiac	Psychiatric	Similarly Other Clinics	Total Nursing Visits	HenrySt. Visiting Nurse Service	Similarly Other Services	Total Family Welfare Visits	C.O.S.& Similarly Other Agencies	Total Education Visits	Lectures	Exhibits
1													
2													
3													
4													
.....													
31													
Total													

types, for convenience in reports, namely, clinics, nursing, family welfare, and educational. This classification has been found in the main to work well for a general grouping of services.

In the day book the visits to each of these types are totaled so that the distribution of visits made to the Health Center is brought out. By this arrangement the trend of activities in the Health Center will be shown: for instance, in the East Harlem Health Center since its opening October 1, 1921, 68 percent of the visits in the Center have been made to clinics. Such percentages will indicate types of work which are not being adequately developed in the health center. At the end of the month the columns in the day book are totaled and from this a monthly statement can be made. The following shows a six months' summary statement of services rendered in the Health Center.

TOTAL NUMBER OF VISITS MADE TO EAST HARLEM HEALTH CENTER BY PERSONS FOR WHOM SOME SERVICE WAS RENDERED

October 1, 1921, to March 31, 1922

(Population of E. H. H. C. district, 112,199)

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total	Percent of all Visits
To clinics	2885	3226	3656	3767	3624	4766	21,924	68.8
To family welfare agencies.....	512	574	542	636	525	529	3,318	10.4
To other health agencies.....	169	376	282	292	177	252	1,548	4.8
To educational agencies	255	789	1293	1041	817	911	5,106	16.0
Total	3821	4965	5773	5736	5143	6458	31,896	100.0

Graphic charts can be made from the tabulation in the day book which show the trend of the work. A large wall chart with colored tape, representing the growth of services rendered in the whole Center and to the separate services makes an instructive illustration.

Central Record File.—A simple record card is kept in the central file, of each person who is given any service by the Health Center. (See Form No. 3.) Every organization which is working in the Center keeps its own records with its specialized data, so that only the sim-

4708
Name—Lucia, Carmela Address—324 E. 115th St., Fl. 4

Case No.	Agencies	Dates of Visits
A-3794.....	C. O. S.....	Apr. 11 .....
.....	.....	.....
.....	.....	.....
.....	D. of H. P. D.[3]	Apr. 11, May 2, 25 .....
.....	.....	.....
.....	.....	.....
.....	Gen. Med. Cl.	May 30 .....
.....	.....	.....

FORM NO. 3 (CARD FOR CENTRAL RECORD FILE)

plest facts for the identification of the individual need be kept in the central record. Although the day book gives the number of visits paid to the Center, it does not show the number of individuals reached. The items transcribed to Form No. 3 are taken from the direction slips. The cards are filed in alphabetic order and each new record numbered. From the record numbers can be ascertained how many individuals have come to the Center during the month who had not been there previously. They represent also the number of individuals in the community which the Health Center is reaching. On each individual record card are transcribed the dates of visits made and the agency to which these visits are made. Thus the record gives every agency that has had any contact with the individual.

At the end of a year's period of work, the record cards should be tabulated as to certain important items of information. The question as to what extent different districts in the community have been using the health center can be answered by a tabulation of addresses on the record cards. The district units may be streets, blocks, or other geographical areas suited to the type of community. With these facts can be discovered the proportionate use which these areas are making of the health center in comparison with their known health needs, as brought out by statistics on the prevalence of disease and death.

Monthly Report and Summary.—As already stated, the Health Center for which this record system was planned is made up of more than twenty health, family welfare and allied organizations. Although few other health centers will have to gather their statistical facts from as many different organizations, even the simplest one-room health center will have several activities such as clinics, classes, and other services which will bring similar problems to them in greater or less degree. The first step in making out a periodical report must be the selection of comparable and standard units of information. Organizations or services doing the same general type of work will need to use terms which have some common meaning and which lend themselves to comparison of results. It was found in this experiment that in many of the organizations the reports which they usually made out could not be compared with those of other similar organizations due to lack of uniformity in the terms used and the dissimilarity of items of information reported. Based on a study of the existing reports of the various organizations coöperating in this Health Center, three types of report forms have been devised which follow the general division used in the day book, namely, nursing, clinic and family welfare. These reports are prepared by the respective agencies from data collected by them and are submitted monthly to the Health Center. The re-

port Forms Nos. 4-A, 4-B, and 4-C* are a first attempt to bring together some common form of report for the same type of work in the Health Center, and are therefore subject to revision as the work of the Center progresses. An endeavor will be made in these paragraphs to point out why certain items of information have been chosen and to what uses the collected information can be put.

In all types of reports as many items as possible have been based upon the same standards. For example, in each type of report the number of visits outside the Center, that is, the number of home visits, follow-up clinic visits, and all other visits, have been asked for. These items, when compiled from all the agencies or services, give the total visits in the community made by the Health Center nurses and other workers. This information, with the attendance in the Health Center, gives a fairly complete account of the amount of service rendered by the Center. The item of age periods, which appears on the forms above referred to, may need to vary according to the general field of work which the Center has chosen. For all reports in this Center these periods have been so distributed that they may be combined into the following groups: number of children under 5 years of age, children from 5 to 16 years (school age), all ages over 16 years. In clinics doing specialized work these ages have been further subdivided; for example, in work of the baby health station, the period under 2 years of age has been used. These statistics on the work done for various ages can be related to the distribution by ages of the population for the district. Another important relation can be brought out by comparing the amount of actual work done by the Center with the health needs of the district, as shown by the vital statistics for the various ages of the population.

In the nursing reports, the number of nursing visits made according to the disease are asked for. This information will be used to show, in the case of certain diseases in which the Health Center is especially interested, what ratio exists between the number of visits made and the particular disease. These figures will help in pointing out diseases which are receiving too few or an unduly large number of visits according to the usual standards of nursing. Measures can then be used to bring about a better proportion of visits.

It is of interest and practical importance to the director and administrators of the Health Center to know what sources are sending people to the Center. This information is secured in each report under items of "number of persons referred by." These facts will help to show what coöperation the Health Center is receiving from outside organizations, such as schools and settlements. The information from "number referred by family, neighbor, self" will show to some degree in what favor the Center is held among the people of the community. Such information may point out the need for further advertising of the services to the community which the Center is able to render or to make known its resources through a wider educational campaign.

The facts on the work of the various services as given in the monthly report forms just described are incorporated in a simple summary report. This has been done for a six months' period at present in the East Harlem Health Center and will be carried forward later to a period of a year. A sample of certain items summarized on new clinics is given here.

With health centers in an experimental stage and usually in need of additional financial support, it is of prime importance that they be able to present interesting and accurate information about their accomplishments. Health

*These forms are too long for reproduction here, but copies of them may be obtained by those interested from the East Harlem Health Center, 345 East 116th Street, New York City.

NEW SERVICES IN THE EAST HARLEM HEALTH CENTER

(Six months' summary, from date of opening, September 1, 1921, to February 28, 1922)

TABLE 1. SOURCE OF NEW CASES

	Total	Gen. Med.	Cardiac	Psychiatric	Nutrition	Oral Hygiene	Dental
Relief or health agency in Health Center	378	126	18	13	33	128	60
Family, neighbor, self	164	85	5	..	..	54	20
Schools and settlements	392	42	5	4	31	224	86
Physicians	4	2	..	..	..	1	1
All others	27	69* 2	15	1	9	..	..
Total visits	1034	(257*) (69*)	43	18	73	407	167
Revisits	638	78	15	22	259	0	264
Total Clinic Visits	1672	404	58	40	332	407	431

*Also 69 teachers in the district have been given examination by the General Medical Examination Clinic.

centers will find it of utmost value to be able to give in their reports and publicity work to the community and the center's supporters a clear idea of their usefulness. Such facts as have been here described should form a ready store of information about the services rendered. By discriminating use of vital statistics the outstanding health needs of the community can be clearly presented. As time goes on, the continuous vital records and service records will show the relative results accomplished and relative efficiency of the various services.

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HOW ONE RURAL COUNTY SECURED AN EFFICIENT HEALTH DEPARTMENT

THE development of a complete health service for a rural county in the short space of three years is an achievement worthy of notice. This is the record of the Health Department of Arlington County, Virginia, under the leadership of Dr. J. W. Cox. This record is all the more remarkable when it is realized that previous to the establishment of the Health Department there was a total lack of health service in this county, and early efforts met with more than the usual amount of reactionary opposition. The credit for the inauguration of this work belongs to the United States Public Health Service, which placed Dr. Cox's services at the disposal of Arlington County for the purpose of demonstrating what can be accomplished under the direction of a trained leader.

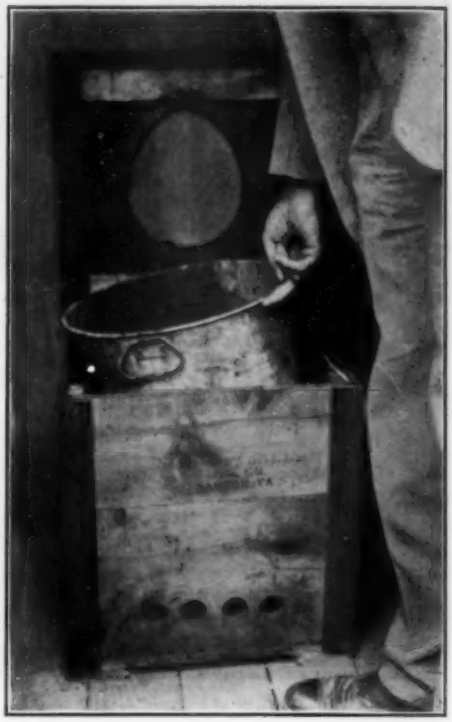
The story of Dr. Cox's success is a thrilling one. Newspapers which at first refused to print Health Department news now demand, to the point of legal proceedings, this information for their readers. A group of physicians hostile to clinics has become a medical society heartily assisting in their operation. A county supervisor vetoing child welfare work for his district now presses the health officer to accept $5,000 to build and equip a baby health station for his part of the county. And, most important of all, an apathetic public, now organized through its women into a volunteer army of supporters and defenders of the Health Department, assures the continuance of this work indefinitely.

The health officer, the nurse, and the dentist unite to examine the school children of Arlington County every two years. In alternate years strenuous follow-up assures correction of the defects discovered. One remote one-room school has a record of 100% corrections, and several classrooms in the larger schools have equaled this record.

The school children themselves constitute the Junior Health Department. The boy and the girl junior health officer of each room make a daily inspection of their class-mates to determine observance of the health rules. The Junior Health Department reports weekly to the county health officer all births, deaths, and sickness that it knows of in the community. These reports have been of real value to the health officer.

These achievements of statesmanship were but the necessary preliminaries to a campaign of health protection for all. This campaign has made use of modern knowledge and experience in the health field. Even further than this, the health officer has appropriated ideas and methods from other fields to apply them to the solution of his problems. The accompanying pictures tell but a small part of the story.*

*A more extensive description of the work in Arlington County will be found in *Mother and Child* for June, 1922, under the title of "A Rural Health Job Well Done," by Homer N. Calver.



The Health Department has experimented with this type of pail closet which has no vent and is not screened. A small amount of gas tar is placed in each pail. This spreads over the surface of the liquid in the pail and further small amounts of gas tar are added from time to time in order to keep the film intact. There is practically no odor from this closet except the not unpleasant one of the gas tar which is apparently disagreeable to flies, for they do not enter the room where these closets have been installed.

When the law was secured requiring the installation of sanitary closets it was rigidly enforced. In this respect "education" was effected by process of law. The pail system is in use in Arlintgon County and the Health Department makes collections in a metal tank-wagon. Disposal is accomplished by plowing the contents of the tank into the ground. The fees from the householders for the collection service support it and pay a dividend.

REPORT OF THE COMMITTEE ON SALARY STANDARDS

To be presented for action at the Fifty-first Annual Meeting of the American Public Health Association, Cleveland, Ohio, October, 1922

In the latter part of May, 1921, the American Public Health Association appointed the following Committee on Salary Standards:

Dr. Carroll Fox, United States Public Health Service, Chairman.

Dr. S. J. Crumbine, State Health Officer of Kansas.

Dr. J. A. Ferrell, International Health Board.

Dr. J. R. Phelps, U. S. Navy Medical Corps.

Mrs. Maud Wood Park, National League of Woman Voters.

James A. Tobey, National Health Council, Secretary.

The purpose of this Committee was to investigate the present compensation of sanitarians and make recommendations as to minimum standards for salaries of public-health workers. In accordance with the instructions of the Committee, the secretary has, therefore, collected data on the salaries of sanitarians. The figures regarding the state health departments were obtained by a questionnaire, to which replies were received from all the state health officers except those of Georgia and Vermont. Data on municipalities for 1922 were derived from the Committee on Municipal Health Department Practice of the A. P. H. A. Other sources are cited in the references. All salaries are given "per annum," except a few marked "M," which are monthly.

The report of the committee is herewith presented in two parts: first, statistics concerning salaries;* second, conclusions and recommendations.

I. Existing Salaries of Sanitarians

A. In the Federal Government

1. *The U. S. Public Health Service, Army and Navy*—The present (May, 1922) salaries of officers in the U. S. Public Health Service are as follows:[1]

Table 1

Grade	Pay authorized by act of Aug 14, 1912, with increase by act of May 18, 1920					Commutation. Quarters, Heat & Light	Total Allowable Maximum Pay and Allowances
	Base pay	After 5 years' service	After 10 years' service	After 15 years' service	After 20 years' service		
Surgeon General.	$6,000	.....	.....	.....	.....	$1,501.30	$7,501.30
Assistant Surgeon General	4,600	$5,000	$5,400	$5,600	$5,600	1,337.41	6,937.41
Senior Surgeon ..	4,100	4,450	4,800	5,100	5,100	1,162.61	6,262.61
Surgeon	3,840	4,140	4,440	4,740	4,840	985.94	5,825.90
Passed Assistant Surgeon	3,120	3,360	3,600	.....	.....	808.53	4,408.53
Assistant Surgeon	2,600	.....	.....	.....	.....	626.41	3,226.41

These amounts are the same as in the corresponding grades of the Army and Navy, and so would also represent the salaries of physicians in the Army and Navy Medical Corps.

There is now a bill before Congress (H. R. 10734), which passed the House on May 12 and the Senate on May 22, 1922, which would create a new schedule of "base pay" for officers of the Army, Navy and Public Health Service.[2]

*In some cases tables given in this report have been condensed for purposes of publication in the Journal, although all essential points are covered. More complete data are on file in the Association office and may be obtained upon application by persons interested.

2. *The Children's Bureau*—Annual salaries in the Children's Bureau of the U. S. Department of Labor are as follows:[3]

TABLE 2

Chief	$5,000
Assistant Chief	2,400
Experts on Sanitation, Industrial Service, Social Service, Statistics, Editor, each	2,000
Special Agents	$1,200 to 1,800

Salaries for carrying out the provisions of the Federal Maternity and Infancy Bill are restricted to one at $3,600, one at $3,500, one at $3,000 and the remainder not to exceed $2,000.[4]

3. *Health Section of the Bureau of Indian Affairs*—

TABLE 3

Chief Medical Supervisor	$3,000
Medical Supervisor	2,250
Special Physicians	1,800
Special Physicians	1,600
Special Traveling Field Nurses	840
Traveling Field Dentists	1,500

4. *The Lehlbach Reclassification Bill.* There is at present a bill (H. R. 8928) before Congress which provides for a standard salary scale for government employees. The bill puts all civilian em-employees of the government into the following eight groups: professional, subprofessional, clerical, institutional, custodial, inspectional, police and criminal investigation service, and fire service. Under the first group are expressly included the following callings: bacteriology, biology, chemistry, child hygiene, dentistry, dietetics, engineering, medicine, pathology, pharmacy, social economics, statistics, and therapeutics. The professional group is then arranged in six grades. The first is a junior one for those performing the simplest kind of professional work, and has salaries of $1620, $1740, $1860 and $1980. Grade two would include those classes of positions, the duties of which are to perform under general direction "assigned professional work requiring professional training and previous experience but not the exercise of independent judgment." The compensation in this grade would be $2100, $2280, $2460, and $2640. Grade three includes those who perform independently or with associates from the lower grades responsible work requiring extended training and considerable successful previous experience. Salaries here range from $2820 to $3540. Grade four is that in which independent and highly expert professional work would be performed, or the administration of a minor division of a large organization or a major division of a small organization. Salaries would be from $3720 to $4620. Grade five includes those acting as assistant head of a large professional organization, administrative head of a major division, head of a small organization, or consulting specialist. Here the salaries would be from $4860 to $5460. Finally, grade six includes the technical and administrative heads of a major professional or scientific bureau. The compensation in this grade is from $5400 to $6600.

This bill has passed the House and in the Senate has been referred to the Committee on Appropriations, having been reported by the Committee on Civil Service.[5]

B. *In National Voluntary Agencies*

An analysis of the salaries of sixty-two executives in the ten leading national voluntary health agencies in the United States shows the following range (1922):

TABLE 4

	Number	Per cent
$10,000	1	1.7
8,000	4	6.4
7,500	2	3.2
7,000	2	3.2
6,000	7	11.4
5,500	2	3.2
5,000	4	6.4
4,000-$4,500	6	9.7
3,000- 3,800	16	25.8
2,000- 2,700	16	25.8
1,800	2	3.2
	62	100.0

Average, $4.242

The rate of basic pay adopted by the International Health Board of the

Rockefeller Foundation for its regular staff members is as follows:

TABLE 5

	Per Month	Per Year
First six months	$208.33	$2,750
Second six months	250.00	
Second year		3,500
Third year		4,000
Fourth year		4,500
Fifth year		5,000
Sixth year		5,500
Seventh year		6,000
Eighth year		6,500

Note. Commutation is allowed for foreign service, which amounts to ten per cent of basic pay, plus a variable percentage of the necessary expenditures at a foreign post for board, lodging, and laundry. A limited number of regional directors and central executives receive higher compensation, ranging to $10,000 or more.

C. *In the States*

1. The results of the questionnaire to state health officers are summarized in the following tables. It will be noted that the compensation of state health officers in 1922 ranged from $10,000 per annum to $1,000. These figures are compared in the summary with data collected in 1920 by the secretary of the Conference of State and Provincial Health Authorities of North America.[6]

TABLE 6. SALARIES OF STATE HEALTH OFFICERS

State	Population 1920	Executive Officer 1922	Amount Salary per 1000, 1922
Pennsylvania	8,720,017	$10,000	$1.14
New York	10,385,227	8,000	.77
Massachusetts	3,852,356	7,500	1.98
Ohio	5,759,394	6,500	1.13
Illinois	6,485,280	6,000	.93
Wisconsin	2,632,067	6,000	2.28
Minnesota	2,387,125	5,400	2.26
Montana	548,889	5,000	9.12
Washington	1,356,621	5,000	3.68
New Jersey	3,155,900	5,000	1.58
Alabama	2,348,174	5,000	2.14
North Carolina	2,559,123	5,000	1.95
Louisiana	1,798,509	5,000	2.78
Mississippi	1,790,618	5,000	2.79
West Virginia	1,463,701	4,800	3.28
Missouri	3,404,055	4,800	1.41
Oregon	783,389	4,600	5.87
Michigan	3,668,412	4,500	1.25
California	3,426,861	4,500	1.31
Virginia	2,309,187	4,200	1.82
Maryland	1,449,661	4,000	2.76
Kentucky	2,416,630	4,000	1.66
Connecticut	1,380,631	4,000	2.90
Kansas	1,769,257	4,000	2.26
New Mexico	360,350	4,000	11.10
South Carolina	1,683,724	4,000	2.38
Maine	768,014	4,000	5.21
Nebraska	1,296,372	4,000	3.09
Indiana	2,930,390	4,000	1.37
Dist. of Columbia	437,571	4,000	9.14
Wyoming	194,402	4,000	20.58
Utah	449,396	4,000	8.90
Oklahoma	2,028,283	3,600	1.77
Idaho	431,866	3,600	8.34
Arkansas	1,752,204	3,600	2.05
Rhode Island	604,397	3,500	5.79
Tennessee	2,337,885	3,500	1.50
South Dakota	636,547	3,200	5.03
Iowa	2,404,021	3,000	1.25
Florida	968,470	3,000	3.10
New Hampshire	443,083	3,000	6.77
Texas	4,663,228	3,000	.64
Nevada	77,407	2,500	32.30
Colorado	939,629	2,000	2.13
Delaware	223,003	2,000	8.97
Arizona	334,162	1,000	2.99

Summary

Average salary, 1920	$4,040
Average salary, 1922	4,453
Average salary per 1,000 population, 1920	$3.41
Average salary per 1,000 population, 1922	4.35
Number of increases in 1922 over 1920	14
Number of decreases in 1922 over 1920	2

Salary (1922)	Number	Percent
$10,000	1	2.2
8,000	1	2.2
7,500	1	2.2
6,000-6,500	3	6.5
5,000-5,400	8	17.3
4,000-4,800	18	39.2
3,000-3,600	10	21.7
2,000-2,500	3	6.5
1,000	1	2.2
Total	46	100.0

TABLE 7. SUMMARY OF SALARIES, CHIEFS OF DIVISIONS, STATE DEPARTMENTS OF HEALTH

	$5,000 and up	$4,000-5,000	$3,000-4,000	$2,000-3,000	Under 2,000	Total Reporting	Average
Child Hygiene	1	7	9	12	2	31	$3,385.48
Communicable Diseases	0	11	8	4	1	24	3,445.84
Engineering	3	9	11	12	2	37	3,219.89
Food and Drugs	1	1	8	6	1	17	2,929.41
Laboratory	1	10	15	7	1	34	3,356.17
Vital Statistics	1	1	5	6	5	18	2,412.25
Venereal Diseases	2	4	16	7	4	33	3,057.57
	9	43	72	54	16	194	

D. In Counties

Salaries for county health officers in the states with which the International Health Board is coöperating in county health work during 1922 range as follows:

TABLE 8

Alabama	$2,700, 3,000, 3,200, 3,500	9 counties
Indiana	3,000	3 counties
Kansas	3,000	6 counties
Kentucky	3,000	6 counties
Louisiana	3,000	5 counties
Mississippi	3,000	7 counties
Missouri	2,750, 3,000, 4,200	6 counties
New Mexico	3,000	8 counties
South Carolina	2,750	6 counties
Tennessee	2,500	5 counties
Texas	2,700	4 counties
Virginia	3,000	4 counties
West Virginia	3,000, 3,600, 4,000	4 counties
Total		73 counties

E. In Municipalities

1. Data of 1918.—In 1918 Dr. L. K. Frankel, who was then president of the American Public Health Association, collected statistics from 417 municipal health officers.[7] He found that 60% of these health officers received less than $25 a week. Of the total, only 36.7% were full-time health officers and of these, 25% received less than $25 per week, 63.3% were part-time officers and 80% of these received under $25 per week. The average salary for the entire group was $1,383 per annum. The minimum salary was $50 and the maximum salary $7,500. The minimum and maximum salaries for cities having a population of 75,000 to 100,000 and in cities having a population of 100,000 to 250,000 were the same, the minimum being $1,500 and the maximum $4,000.

2. Data of 1920. In September, 1920, Dr. J. A. Kappelman, of Canton, Ohio, collected statistics concerning salaries of health officers in 115 cities. The average was $2,727.85 per annum. The range of salaries may be summarized as follows:

TABLE 9

Salary	Number	Percent
$7,500	1	.8
6,000	1	.8
5,000	6	5.3
4,000-4,800	9	7.9
3,000-3780	31	26.9
2,000-2,800	37	31.2
1,000-1,900	25	21.8
300- 600	5	4.3
Total	115	100.0

3. Data from Study Made in 1921.—The First Report of the Committee on Municipal Health Department Practice of the American Public Health Association contains the following summary of salaries of health officers, from which we quote:[8]

> The largest cities, those having more than 500,000 population, as we should expect, pay proportionately higher salaries than do the smaller cities. Thus we find that 75 per cent of the larger cities for which we have data pay their health officers over $5,000 a year; 60 per cent of the cities of population of 250,000 to 500,000 pay their health officers $5,000 a year or more, and 17 per cent of the last group of cities pay their health officers $5,000 or more for an annual salary. In the first group of cities the range is from $2,200 for a part-time health officer to $10,000 for a full-time officer. In half the cities of this group the salary is $7,000 or over.
>
> In cities of the second group, the range is from $1,200 for a part-time health officer to $6,000 in one city, 18 cities paying $4,000 or over, and 18 paying less than $3,000, the health officers, however, being on part time except in two instances.
>
> The following table indicates the detailed situation in the 78 cities for which data were available.

TABLE 10. NUMBER OF CITIES CLASSIFIED BY WHOLE OR PART-TIME SERVICE AND SALARY OF HEALTH OFFICER

Cities of population	Total Cities	Whole Time	Part Time	$7,500 and over	$5,000-$7,000	$3,500-$4,999	Under $3,500
500,000 and over	12	11	1	6	3	2	1
250,000 to 500,000	10	9	1	0	6	4	0
Under 250,000	54	31	23	0	9	17	28

The Committee on Municipal Health Department Practice has also turned over to the Committee on Salary Standards more specific data, which we have arranged in the following table:

TABLE 11

SALARIES OF CITY HEALTH OFFICERS

City.	1921.	Population, 1920.	Salary per 1,000 pop.
Philadelphia, Pa.	$10,000	1,823,779	$ 5.48
Chicago, Ill.	10,000	2,701,705	3.70
Detroit, Mich.	7,500	993,678	7.50
New York, N. Y.	7,500	5,620,048	1.33
San Francisco, Cal.	7,500	506,676	12.82
Boston, Mass.	7,500	748,060	10.02
Pittsburgh, Pa.	7,000	588,343	11.89
Newark, N. J.	6,500	414,524	15.68
Buffalo, N. Y.	6,000	506,775	11.83
Providence, R. I.	6,000	237,595	25.25
Cincinnati, Ohio	6,000	401,247	14.95
Milwaukee, Wis.	6,000	457,147	13.12
Grand Rapids, Mich.	5,900	137,634	42.86
Flint, Mich.	5,600	91,599	61.13
Bridgeport, Conn.	5,000	143,555	34.82
Indianapolis, Ind.	5,000	314,194	15.91
Minneapolis, Minn.	5,000	380,582	13.13
New Orleans, La.	5,000	387,219	12.91
Norfolk, Va.	5,000	115,777	43.18
Omaha, Neb.	5,000	191,601	26.09
St. Louis, Mo.	5,000	772,897	6.48
Seattle, Wash.	5,000	315,312	15.85
Syracuse, N. Y.	5,000	171,717	29.11
Canton, Ohio	5,000	87,091	57.41
Jacksonville, Fla.	4,800	91,558	52.42
Houston, Texas	4,800	138,276	34.70
Kansas City, Mo.	4,800	324,410	14.79
Birmingham, Ala.	4,500	178,806	25.16
Dallas, Texas	4,400	158,976	27.67
Baltimore, Md.	4,250	733,826	5.79
Washington, D. C.	4,000	437,571	9.14
St. Paul, Minn.	4,000	234,698	17.04
Richmond, Va.	4,000	171,667	23.30
Hartford, Conn.	4,000	138,036	28.97
Denver, Colo.	4,000	256,491	15.59
Dayton, Ohio	4,000	152,559	26.21
Savannah, Ga.	4,000	83,252	48.04
Akron, Ohio	3,800	208,435	18.23
Columbus, Ohio	3,780	237,031	15.94
Oklahoma City, Okla.	3,600	91,295	39.43
Los Angeles, Cal.	3,600	576,673	6.24
Nashville, Tenn.	3,600	118,342	30.42
Albany, N. Y.	3,500	113,344	30.87
Elizabeth, N. J.	3,500	95,783	36.54
New Haven, Conn.	3,300	162,537	20.30
Atlanta, Ga.	3,300	200,616	16.44
Des Moines, Iowa	3,300	126,468	26.09
Salt Lake City, Utah.	3,300	118,110	27.94
San Antonio, Texas.	3,300	161,379	20.44
Fall River, Mass.	3,000	120,485	24.89
Kansas City, Kan.	3,000	101,177	29.65
Louisville, Ky.	3,000	234,891	12.77
Memphis, Tenn.	3,000	162,351	18.47
Reading, Pa.	3,000	107,784	27.83
Tacoma, Wash.	3,000	96,965	30.93
Erie, Pa.	2,860	93,372	30.63
Worcester, Mass.	2,800	179,754	15.57
Springfield, Mass.	2,800	129,614	21.60
Schenectady, N. Y.	2,600	88,723	29.30
Scranton, Pa.	2,500	137,783	18.14
Lawrence, Mass.	2,500	94,270	26.51
Duluth, Minn.	2,400	98,917	24.26
Cambridge, Mass.	2,400	109,694	21.87
Lowell, Mass.	2,306	112,759	20.45
Youngstown, Ohio	2,280	132,358	17.22
Trenton, N. J.	2,250	119,289	18.86
Cleveland, Ohio	2,200	796,841	2.76
Toledo, Ohio	2,100	243,164	8.63
Camden, N. J.	2,000	116,309	17.19
Fort Worth, Texas.	1,800	106,482	16.90
Rochester, N. Y.	1,724	295,750	5.82
Paterson, N. J.	1,560	135,875	11.48
Average	$4,188		

SUMMARY

Salary	Number	Per cent
$10,000	2	2.7
7,000 to $7,500	5	6.9
6,000 to 6,500	5	6.9
5,000 to 5,900	12	16.7
4,000 to 4,800	13	18.1
3,000 to 3,800	18	25.1
2,000 to 2,860	14	19.5
1,560 to 1,800	3	4.1
Total	72	100.0

The following table shows in summary the salaries of the directors of various bureaus and divisions in city health departments:

TABLE 12. SUMMARY OF SALARIES, DIRECTORS OF DIVISIONS OR BUREAUS, CITY HEALTH DEPARTMENTS

	$5,000 and up	$4,000-5,000	$3,000-4,000	$2,000-3,000	Under 2,000	Total Reporting	Average
Communicable Diseases	3	3	12	16	13	47	$2,778.29
School Hygiene	2	3	4	5	11	25	2,460.40
Laboratory, Chemist or Bacteriologist	2	2	15	23	17	59	2,540.96
Food and Dairies	0	2	8	28	15	53	2,301.73
Sanitary Inspection	0	4	6	21	23	54	2,316.16
Vital Statistics	1	1	5	11	22	40	2,115.55
Public-health Nursing	0	0	0	3	14	17	1,681.17
Totals	8	15	50	107	115	295	

The U. S. Public Health Service also presented data on health officers' salaries in 81 cities of 70,000 population or over in 1921, before the Congressional Committee on the Readjustment of Service Pay (p. 436).

4. The Ohio Plan.—In 1919 the State Civil Service Commission of Ohio sent out a prospectus regarding positions as district health officers in accordance with a law which had been passed (and has since been repealed). The districts comprised 14 municipalities having populations of 25,000 or more, and 88 general districts.

The salaries, as shown in the accompanying table, were based on the age, experience, training, and technical knowledge of the applicant.

TABLE 13

SALARY RATES AND REGULATIONS GOVERNING THE COMPENSATION OF DISTRICT HEALTH COMMISSIONERS

	Rate A	*Rate B*	*Rate C*
Grade I	First 3 years $6,000	3-6 years $6,600	7 years and over $7,200
Grade II	First 3 years $5,000	3-6 years $5,500	7 years and over $6,000
Grade III	First 2 years $4,000	2-4 years $4,400	5 years and over $4,800
Grade IV	1st year $3,000	2nd year $3,300	3 years and over $3,600
Grade V	1st year $2,000	2nd year $2,200	3 years and over $2,400

In Grades V and IV incumbents shall advance from the lower to the next higher rate within the same grade after one year of satisfactory service.

In Grade III incumbents shall advance from the lower to the next higher rate after two years of satisfactory service.

In Grades II and I incumbents shall advance from the lower to the next higher rate within the same grade after three years of satisfactory service.

F. Public Health Nurses

The following data have been compiled by the National Organization for Public Health Nursing concerning salaries of public-health nurses for the year 1921.[9] The National Organization for Public Health Nursing has also collected statistics relating to the year 1921 for salaries of nurses.

G. Summary and Comparisons

1. Salaries in the Army, Navy and Public Health Service vary from $2,600 to $6,000 per annum plus commutation. Those in other government bureaus engaged in health work seem to be much lower.

2. In the states, salaries of executive officers have increased somewhat in the last two years. They range from $1,000 to $10,000 a year, the average being $4,453. Nineteen states pay more than the average, twenty-seven less.

3. In seventy-three counties in thirteen states salaries are from $2,700 to $4,200, though most of them are $3,000 per year.

4. The salaries of municipal health officers show a wide variation. Of seventy-two cities of more than 100,000 population, the lowest amount was $1,560 for a part-time officer, $1,724 for a full-time official; while the highest salary paid is $10,000. The average is $4,188, which is lower than that of the state health officers. Thirty cities pay more than the average, forty-two pay less. It is interesting, however, to note that salaries of health officers are usually greater than those of police chiefs in the same cities.[10]

5. The salaries of chiefs of divisions and bureaus in both state and city health departments are, naturally, much less than those of the executive officers. The general average is somewhat over $3,000 per annum, with the amounts ranging from $1,000 to $7,000.

6. It is a notable fact that more high salaries are paid to persons in executive positions in national voluntary health

TABLE 14

NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING

INQUIRY ON SALARIES PAID TO PUBLIC HEALTH NURSES IN THE UNITED STATES

STATE	STATE SERVICE				VISITING NURSING ASSOCIATIONS			MISCELLANEOUS		
	Director	Supervising Nurses	County Nurses	City and Town Nurses	Superintendents	Supervisors	Staff Nurses	City Health Depts.	Infant Welfare Societies	School Boards
Alabama	Y 3000	Y 1800	Y 1500–1800	Y 1500–2000			M 125	M 135		M 140
Arizona		M 150		M 150				M 125		M 125–175
Arkansas	Y 1900	Y 1500	Y 1500–1800	M 1200				M 100	M 125	M 100
Colorado			M 75– 150	M 75– 125						
Connecticut	Y 2700	Y 1800			Y 1800–3000	M 125– 135	M 90– 125	Y 800–1200		Y 800–1500
Delaware	Y 2400		M 125	M 125	Y 2200	M 125	M 85– 100		M 100– 125	Y 1200
Florida			M 135			M 150			M 125	M 125
Georgia	Y 2400	W 35– 40	M 125– 150	M 100– 125	M 150–200	M 150	M 100– 120	M 115– 150	M 125	M 115– 150
Idaho		Y 2000	Y 1800	Y 1500						Y 1500
Indiana	Y 2000	Y 1800	Y 1500–1800	Y 800–1800	Y 1500–2400		Y 780–1200	Y 960–1500	Y 960–1200	Y 900–1500
Iowa	Y 2500	Y 2000	Y 1500–1800	Y 1200–1600	Y 2500	Y 1800	Y 1200–1600	Y 1200–1600	Y 1200–1600	Y 1800–2280
Kansas		M 150	M 150– 175	M 100		M 175– 200	M 125– 150	M 125– 150		M 125– 200
Kentucky	M 200		M 125– 150	M 125– 150						
Louisiana	Y 2700		Y 1620–1800	M 85– 110						
Maine	Y 2400		Y 1500–1800	Y 1500			Y 1200–1500	Y 1200		Y 1500
Maryland	Y 1800		M 100– 150	Y 1200–2000		Y 1500	Y 1200–1400	Y 1200–1500	Y 1200–1400	
Michigan			Y 1400–1800	Y 1200–1800	Y 2400	Y 1680–1860	Y 1200–1680	Y 1400–1800	M 95	Y 1500–1800
Minnesota	Y 1800	Y 1800	Y 1500–2400	Y 1140–1500		Y 1500	Y 1350	Y 1200–1500	Y 1500	Y 1500–1800
Mississippi	M 175		M 150	M 150						
Missouri		Y 2200	M 125– 175	M 80 up						
New Hampshire		Y 1500–2000	Y 1300–1500	Y 1200–1500	Y 1200–1800		Y 900–1200	Y 1400	Y 1200–1500	Y 1200–1500
New Mexico	Y 2040		Y 1800	Y 1300–1500						Y 1300–1500
New York	Y 3250	Y 1500	Y 1200–1500	Y 780–2500	Y 1500–2400	Y 1500–2400	Y 900–1200	Y 1200–1800	Y 1200–1500	Y 780–1500
North Carolina	Y 2500	Y 1800	M 125	M 100– 135	Y 1800–2400		M 100– 135	M 100– 135		M 125
North Dakota	Y 2000		Y 1650	Y 1200						Y 1200
Ohio	Y 2740	M 145	Y 1500–2000	M 135– 175				M 120– 150	M 125– 150	M 125
Oklahoma	Y 2200		M 150	M 150				M 110– 150		
Oregon	Y 2700	Y 2400	Y 1500–1800	Y 1500–1800	Y 2400	Y 1800	Y 1320	Y 1320	Y 1430	Y 1320–2000
South Carolina	Y 3150	M 150	M 125– 150	M 125		M 150	M 125	M 120		M 89
South Dakota		M 200	M 150	M 175						M 150
Tennessee	Y 2200	Y 1800	M 125– 150	M 125– 150						
Texas	Y 3600	Y 2000	Y 1500–2400	Y 1500–2400	Y 1800–2400		Y 1080–1200	Y 1080–1200		Y 1200–1500
Utah	M 175									
Virginia	Y 2500	Y 2000	Y 1500	Y 1200–1500						
West Virginia	Y 2500	Y 2000	M 150	M 100– 175	Y 2000–2400	Y 2000–2400	M 100– 150			M 150– 175
Wisconsin	Y 2500	Y 2100	M 135– 165	M 110– 150						
Wyoming		Y 2000	Y 1800–2100	Y 1800						Y 1800

agencies than to health officials. The average of 62 salaries in 10 voluntary organizations is $4,242, which is higher than the average for municipal health officers but lower than that for state health officers.

7. While it is impossible to calculate the mean of the more than 25,000 salaries of sanitarians embraced in the scope of this report, with any significant result, it is estimated that it would fall between $3,000 and $4,000 and that the majority of the salaries would be less than the mean.

8. Comparison of the distribution of salaries of executives of national voluntary agencies and state, county, and municipal health officers (1922 figures) shows the following results (expressed in percentages):

TABLE 15

	Nat'l. Vol. Agencies Per cent	State Per cent	County Per cent	Municipal Per cent	Totals Number	Totals Per cent
$10,000	1.7	2.2	0	2.7	4	1.6
8,000	6.4	2.2	0	0	5	2.0
7,500	3.2	2.2	0	5.5	7	2.8
7,000	3.2	0	0	1.3	3	1.2
6,000-$7,000	11.4	6.5	0	6.9	15	6.0
5,000- 6,000	9.6	17.3	0	16.7	26	10.3
4,000- 5,000	9.7	39.2	4.1	18.1	40	15.5
3,000- 4,000	25.8	21.7	69.9	25.1	95	37.6
2,000- 3,000	25.8	6.5	26.0	19.5	52	20.6
1,000- 2,000	3.2	2.2	0	4.2	6	2.4
	100.0	100.0	100.0	100.0	253	100.0

II. CONCLUSIONS AND RECOMMENDATIONS

1. *Existing Salaries.*

The salary to be paid to a health officer depends upon a number of factors. Some of these are his training and experience, the population and type of place of which he is executive, his length of service, and, finally, economic conditions and the standard of living. The Committee believes that, in general, the present salaries paid to health officers are *too low* and that they are not commensurate with the scientific training, personality, and professional responsibility required.

The committee further believes that the tenure of office of health officers should be made more secure, based entirely on merit without political considerations, and that compensation for such office should be made more adequate in accordance with the following minimum standards:

2. *Recommendations*

a. Five thousand dollars should be the minimum salary received by a full-time qualified state health officer and from this figure it should increase up to not less than ten thousand dollars depending upon the population involved, industries, area, and the length of service of the executive.

b. With regard to the salaries of chiefs of divisions in the state health departments, the Committee believes that it is difficult to set definite standards. The salary depends upon numerous factors, such as the training, experience, length of service, personality, and general qualifications of the individual, and also upon the type of work, population of state, magnitude of problems, and salary of his superior. The Committee believes, however, that no salaries less than three thousand dollars should be paid in any state to chiefs of divisions, and that in most instances more than this should be paid, bearing in mind the factors outlined above.

c. No qualified county health officer should receive less than $3,000 a year.

d. Minimum salaries of qualified municipal health officers for full-time work should be as follows, according to population:

Population	*Salary*
1,500,000 and above	$10,000
1,000,000 to 1,500,000	7,500
750,000 to 1,000,000	7,000
500,000 to 750,000	6,000
100,000 to 500,000	5,000
50,000 to 100,000	4,000
25,000 to 50,000	3,500
10,000 to 25,000	3,000
Less than 10,000	2,500

The minimum salaries of qualified chiefs of divisions in municipal health departments should be approximately three-fifths of the above scale.

CARROLL FOX, M. D., *Chairman.*
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J. R. PHELPS, M. D.
MRS. MAUD WOOD PARK.
JAMES A. TOBEY, *Secretary.*

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(3) Senate Document No. 429 on Appropriations.

(4) Statement No. 23 on National Health Legislation of the National Health Council, April 1, 1922 (A. J. P. H., June, 1922, p. 535).

(5) Statement No. 17 on National Health Legislation of the National Health Council, Dec. 20, 1921 (A. J. P. H., February, 1922, p. 165).

(6) Financial statistics of the State Department of Health, Reprint No. 660 from the U. S. Public Health Reports.

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(8) First Report of the Committee on Municipal Health Department Practice. Reprint from *American Journal of Public Health*, January and February, 1922.

(9) "Salaries of Public Health Nurses," *The Public Health Nurse*, September, 1921.

(10) See "A Survey of Salaries of Police and Police Departments," by L. H. Cannon, *American City*, December, 1921.

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HEALTH EDUCATION SECTION

The program chairman of the provisional Health Education and Publicity Section of the A. P. H. A., Mr. E. G. Routzahn, of the Russell Sage Foundation, 130 East 22d Street, New York City, wishes to announce that the assistance and advice of all members of the Section as well as of any others interested in health education work is earnestly solicited in preparation for the Cleveland meeting. While the program is well under way, it is sufficiently flexible to make room for other features, and in a peculiar sense, the program of this Section must be a composite of contributions from many members. Those having suggestions are urged to communicate with Mr. Routzahn at once.

Correction

Through an inadvertent error, the members of the Committee on Problems of Canning, whose names were appended to the report of the Committee published in the July issue of the Journal, page 593, are those for 1921-22 instead of those for 1920-21, who prepared the report in question. The names of Messrs. George M. Menge and H. W. Redfield should be omitted from the report as printed, and those of Alfred M. G. Soule and Joseph Race substituted. The other members of the Committee remain the same.

Contributors to This Issue

Owing to shortage of space, we have been compelled to omit the biographical sketches of contributors to this issue.

EDITORIAL SECTION

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SOCIAL WORK AND PUBLIC HEALTH

Without entering the present controversy of the elect over the aims, philosophy, and professional status of social work, the Journal may be pardoned for calling attention to a fact which was strikingly in evidence at the forty-ninth annual meeting of the National Conference of Social Work in Providence last month, and has been increasingly so as the outlines of the field have sharpened. That fact is that, by and large, health, both public and individual, is the most important single factor in social work—most important in the causation of maladjustment, and thus in giving rise to the need for such work and in absorbing the energies, funds, and personnel of social agencies.

This is true not only of avowed health organizations whose full-time program is directed to these ends, but more subtly of those organizations which form the core of the professional social-work movement—the family case-work and charity organization societies. For the family that finds its way to the offices of these agencies usually stands in need of physical rehabilitation before it can attain to economic independence or mental and moral well-being. Ellwood, for instance, in his *Sociology and Modern Social Problems* (page 310), ranks first among the subjective causes of poverty, "physical and mental defects of all sorts, especially those arising from sickness and accidents." He continues: "Sickness causing temporary or permanent disability figures in from 15 to 30 per cent of all cases applying for relief in our large cities. Probably it is the most important single cause of poverty with which charity workers have to deal." He is not here including

intemperance, sexual vice, old age, death of the main support, and other factors which frequently have a public-health significance.

Devine, in his classic analysis of *Misery and Its Causes*, found a much higher percentage. "Ill health," he says, "is perhaps the most constant of the attendants of poverty. It has been customary to say that 25 per cent of the distress known to charitable agencies is caused by sickness." But in classifying the principal disabilities present in 5,000 dependent families who came under the care of the district committees of the Charity Organization Society of New York in two years, he found disabilities of a physical nature to exist in the following order of frequency (the diagnoses were chiefly non-medical), in addition to 18 others of a personal, social, or economic nature: chronic physical disability, temporary physical disability other than accident or childbirth, tuberculosis, childbirth, rheumatism, mental disease or deficiency, and accident. Grouping all the disabilities into eight fairly definite classifications, he found that in 1,000 typical families there was some kind of physical disability in 764 families, and several kinds in some. Roughly, then, we might say that the health factor enters into about three-fourths of all case work in some degree.

And while we have no comparable analysis of the other three of Miss Richmond's "four forms of social work"—group work, social reform, and social research,—it is obvious that workers in these special fields are devoting a considerable portion of their attention to health. The hospital social workers, whom Dr. Richard Cabot has described, form another group whose full time is directed to medical problems, while the public-health nurse, the school nurse, the psychiatric social worker, the child hygienist, and numerous other groups on the borderline between public health and social work, are indicative of the fact that prevention has become the watchword of both professions.

The National Conference of Social Work has for some years maintained a Health Section, whose sessions this year dealt with various practical topics of industrial hygiene, health demonstrations, coördination among voluntary health organizations, nutrition, and veneral-disease control. These sessions were marked by good attendance, vigorous discussions, and attractive exhibits. But the health interest has overflowed the banks of this one channel. A flourishing Mental Hygiene Section has been formed. One of the outstanding features of the Conference was Dr. Vincent's address on international health work, an abstract of which appears elsewhere in this issue. In the informal publicity group which carried on a three-ring circus of its own throughout the Conference, health education represented perhaps the biggest single interest, although the "community chest" movement ran it a close second. Health films made up a majority of the moving pictures that were shown in these meetings.

But there was scarcely a section whose interrelations with public-health problems did not crop out at some point. The visiting sanitarians came away with a new realization that public health *is* social work of a very high order, and that social work that forgets or ignores the health factor is not worthy of the name.

AN ERROR OF OMISSION

In the chapter on "Milk Inspection" from the forthcoming final Report of the Committee on Municipal Health Department Practice, printed in the July issue of the JOURNAL, some interesting comparative data are brought to light regarding the temperature requirements of the cities studied, for milk at different stages of its progress from cow to consumer. Four points in the process are distinguished: at the farms, in transit, at the milk depots, and upon delivery. Naturally it is at the milk depots that the strictest control can be and is observed. In 65 per cent of the 83 cities surveyed, a maximum temperature of but 50° F. is allowed at the milk depots. On delivery, 60 per cent of the cities require 50°. Transit standards are lower, 52 per cent requiring 50°, while on the farms only 51 per cent require this maximum. The standards vary all the way from 45° to 70°, while several cities make no requirements at all. On the farms, for instance, 31 cities require 50° or less; 22 cities, 60° or less; 10 cities, 70° or less; 13 did not state their regulations, while 7 have no requirements.

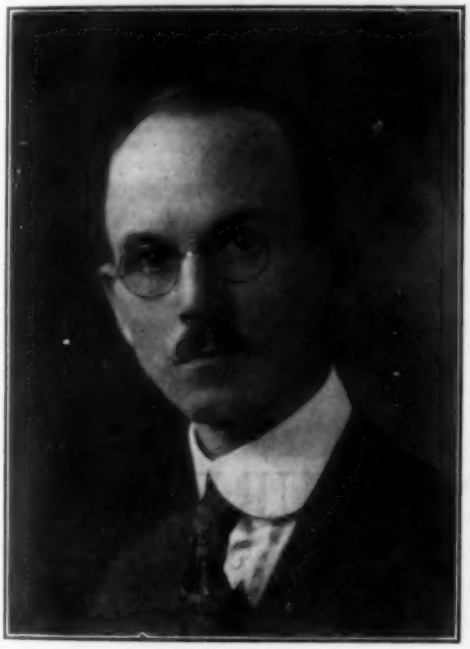
While it is possible and necessary to enforce proper standards at all these points, Dairy and Food Inspector Howard R. Estes, of the Board of Health of Flint, Michigan, in a circular letter to milk producers under his jurisdiction, has recently called attention to a very important point of danger in the process which is likely to be overlooked in the shuffle. We cannot do better than to quote his own words:

> Often it will be found that a milk producer will take the very best possible care of his product up to a certain point—and then he quits. He will cool each pailful of milk immediately after milking, he will store it at a temperature below 60°, and then—he will put it out by the road in the hot sun with no protection from the heat, to wait until the milk hauler appears.
>
> Now stop a minute and see the folly of such a procedure. Why take all of the former precautions unless you finish the job as it should be done? It is a waste of effort to do only half of it. You should consider your responsibility ended only after the milk hauler has taken charge of the milk.
>
> Whenever possible, it is urged that you have the hauler drive into your yard and get the milk directly from the cooling tank. It may be impossible, however, for a driver of a large truck to do this because of the inconveniences of handling a large truck in a small space. Then do the next best thing. Keep the milk in the cooling tank as long as possible. When it is taken out to the road see that it is properly protected by placing in the shade wherever possible, and by wrapping a wet blanket or sack around each can.
>
> Many producers have built small shelters where natural shade was lacking. These give fairly good results. Advice cannot be given to fit every local situation; therefore it is recommended that you keep the milk cold in any manner you may devise as long as it is done by sanitary methods.

Dairy inspectors may not generally have the power to enforce this protection of the milk between producer and carrier without special ordinances, but a great deal can be done by methods of education and persuasion. The conscientious dairyman should be glad to maintain his record at 100 per cent perfection by providing the best possible conditions for his milk as long as it is within his control. It is details like this, apparently trivial, and seldom thought of, which make the difference between a safe and an uncertain food supply.

DR. EDISON B. STARR
1880-1922

The death of Dr. Edison B. Starr, editorial assistant on the JOURNAL, was a great misfortune to industrial hygiene and public health in particular. He was just entering the prime of life when his sudden demise came as a shock to a circle of close friends and many acquaintances. Born July 4, 1880, in Grand Ledge, Michigan, the eldest of five children, he was the son of an inventor of notable accomplishments, who still survives him. His parents moved to Springfield, Ohio, where he



graduated from high school and later from business college. Brought into close contact with a physician in his young manhood, he took up medicine, graduating from Jefferson Medical College, Philadelphia, in 1903, following this with 18 months' interneship at St. Joseph's Hospital, Philadelphia.

He went into general practice in Columbus and later in Springfield, Ohio, where he met and married Miss Helen Ridgely. In 1914 he entered the Springfield Health Department under the city manager plan of government, became assistant director, and soon director of health—positions which he filled with unusual efficiency until a call came from the United States Public Health Service during the war. Then he was placed in industrial hygiene work in Washington and New York.

In 1919 he was appointed director of the Division of Industrial Hygiene of the Ohio State Department of Health, which position he held at his death.

Dr. Starr undoubtedly inherited a deeply investigative trend from his father. While slow in procedure, he was exhaustive, kept his objective always squarely before him, never wavered in pursuit, was possessed of great concentration and of a fine sense of the relative importance of factors in a problem. He was unusually adept in inquiry work. He was the typical man to undertake a Gordian knot problem, where not only a solution but some just, definite, and final action was to be accomplished. Because of this and his general experience in practical health work he was entrusted with the enactments of many important missions in state health work beyond the duties of his own division. He was a thorough student and, as a result of concentrated efforts on individual problems, possessed a rich and exhaustive knowledge regarding them. Some of these he published in this JOURNAL and elsewhere. Had his health permitted he would have published more. One item in particular, it is to be regretted, he did not complete before his death. This was the detailed circumstances in regard to cases of human rabies, which he had investigated and studied with his characteristic thoroughness—a type of disease in which many more scientific case reports are very desirable. He was especially cautious to avoid doing an injustice by act or statement, hence his commitments, both oral and written, came after careful weighing and rang with the finality of fact. He took up abstracting in industrial hygiene for the JOURNAL in 1919. An abstract of Sir Kenneth Gradly's paper on "Lead Poisoning in Industry," from a recent issue of the *Journal of State Medicine*, was his last contribution and will appear in the Septem JOURNAL.

In the autumn of 1920 he experienced what was considered to be a mild attack of influenza, but from which he apparently never completely recovered. In the several months before his death he became more concerned about his health, but repeated examinations were without results. On June 12 he quit his desk. A virulent form of central pneumonia developed quickly; and he died on June 19. He leaves a widow and two children. He leaves also the memory of a model of fine personality marked by sincerity of purpose, as a lasting inspiration for those who were fortunate enough to be close to him in his work.

EMERY R. HAYHURST, M. D.

ASSOCIATION NEWS

LIST OF NEW MEMBERS

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Ramon Pardo, Apartado Postal 144, Oaxaca, Mexico.

EMPLOYMENT BUREAU

HELP WANTED

Help wanted announcements will be carried free in this column until further notice. Copy goes to the printer on the 8th of each month for publication on the 20th. Mail to New York office as early as possible.

In answering keyed advertisements, please mail replies separately to editorial office in New York City. In replying give age, professional training, salary requirements, previous positions held and three or more references.

United States Civil Service Examination. The United States Civil Service Commission announces an open competitive examination for junior microanalyst August 9, 1922. Vacancies in the Bureau of Chemistry, Department of Agriculture, for duty in Washington, D. C., and in the field at $1,400 to $1,800 a year, and in positions requiring similar qualifications at these and higher or lower salaries will be filled from this examination unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion. Applicants should apply for Form 1312 stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board in any state.

Openings for Junior Medical Officers in Government Service.—The United States Civil Service Commission states that there is urgent need for eligibles to fill positions of junior medical officer in the Indian Service and the Coast and Geodetic Survey and that the Commission will receive and rate applications until further notice.

Competitors will not be required to report at any place for a written examination, but will be rated upon the subjects of education, training, and experience as shown by their applications and corroborative evidence.

Full information concerning salaries, etc., and application blanks may be secured from the United States Civil Service Commission, Washington, D. C., or the board of civil service examiners at the post office or customhouse in any city.

Wanted: Health officer with experience in rural sanitation to fill position as state supervisor of county health work. This position will require almost continuous travel in the field. The salary is $3,300 and traveling expenses are allowed. Submit details of education and experience, together with references, to State Bureau of Public Health, Santa Fe, New Mexico.

Wanted: Competent clinical laboratory technician next September. Scope of work: serology especially, then hematology and bacteriology. Instruction in other routine may be had, if needed. Work supervised. Applicant should have had a good training in theoretical science. Salary $1,500 per year. Board and room very reasonable. Address 334 Bank of Galesburg Building, Galesburg, Ill.

Wanted: Nurse with public health training for district work. For details write R. W. Garnett, Health Officer, Danville, Va.

Wanted: Tuberculosis association in northern state desires field secretary. Must be a physician, trained and experienced in public-health work and a good speaker. State qualifications and minimum salary required. Address W. F. W. 492, care of this JOURNAL, New York address.

POSITIONS WANTED

Positions wanted announcements will be carried in this column. The charge is $2 per insertion. Copy should be received at this office by the 8th of the month.

Wanted: Technician in bacteriology, serology and general medical laboratory practice open for an engagement. Graduate of Johns Hopkins School of Hygiene, Three years' practical experience. Address E. M. B. 217, care this JOURNAL.

Wanted: Post as director of sanitation or chief of extensive sanitary inspection service of large railroad, industrial or mercantile corporation, state or municipal health department by sanitary engineer, thirty-one years of age, having eight years' experience in municipal, state and federal public-health work. Now on duty in southern states. Can furnish adequate reference as to ability, integrity, diplomacy and impartiality. Address 219 A. J., care of this JOURNAL, New York address.

Wanted: Public-health work by recent graduate of public-health school. S. B. in biology and public health, Mass. Institute of Technology, C. P. H. in Harvard Technology School. Fourteen months' experience in public-health administrative work. Address A. B. 218, care of this JOURNAL, New York.

Wanted: Position as bacteriologist of municipal or state laboratory or instructional position in bacteriological department of college or university. Six years' experience in teaching and laboratory work. Have M. S. degree from recognized university. Address 220 M. A. J., care of this JOURNAL, New York address.

FOR SALE

For Sale: Property and position in city of 40,000 cosmopolitan population. Rich Ohio community, with excellent schools, roads, churches, etc., in an up-to-date county. Do not write for particulars unless interested in and qualified to do modern public-health work in rural district. Address T. K. R. 490, care of this JOURNAL, New York.

✚

LETTER TO THE EDITOR

TO THE EDITOR:

I have just completed the reading of the June issue of the JOURNAL. If your duties as editor of the JOURNAL entail as many criticisms and unpleasant incidents as fall to the lot of the common run of editors (my impressions have been formed by the remarks of rural paper editors), an occasional appreciation is not unwelcome.

I have found this issue of the JOURNAL the most interesting I have read in months. This is probably because of the nature of the papers, many of which were read before the Section on Food and Drugs.

I merely wanted you to know that I enjoyed this issue, and look forward to more like it.

Best wishes.

C. A. ABELE,
Alabama State Board of Health.

BOOKS AND REPORTS REVIEWED

Pneumonia. (Harvard Health Talks.) *Frederick T. Lord, M.D., Harvard University Press, 1922. Pp. 69. Price $1.00.*

The subject of pneumonia is treated by Dr. Lord in all its aspects in a scientific but non-technical manner. The completeness is shown by the topics discussed such as the menace of pneumonia to people living under different conditions; the types of pneumococci and the importance of understanding the nature of types; the use of the serum for the No. 1 type and the reasons, up to the present time, for its failure to benefit pneumonia due to other types; the predisposing and bacterial causes of pneumonia; the factors underlying the crisis and recovery from pneumonia; the degrees of diagnosis. A thorough consideration is given of the difficulties which have prevented to the present time, the lessening of the amount of pneumonia in the world.

This book deserves to be very widely read. While primarily written for those who are not students of medicine it gives the essential facts in such a clear and unbiased way that physicians themselves can read it and gain by doing so. Dr. Lord in treating the danger of serum shock, advocates not only in cases of pneumonia, that an intracutaneous injection should be given to test the susceptibility of the patient before giving the specific serum intravenously, but urges that this intracutaneous test and the following desensitization should be carried out in persons receiving other serums such as the diphtheria and tetanus antitoxin, even when these serums are given as a preventive.

The reviewer's own practice is not to worry about intracutaneous tests before giving intramuscular injections of tetanus and diphtheria antitoxins, as it is his belief that the danger is so slight that the time lost is not compensated for by the knowledge gained.

WILLIAM H. PARK, M. D.

The British Official Medical History of the Great War. *Edited by Sir W. H. Macpherson, K. C. M. G., C. B., LL.D. London: His Majesty's Stationery Office, 1922. Distributed by British Commonwealth Publishers, Ltd., Montreal, Canada. Vol. I, 463 p. Complete in two vols. Price $10.00.*

It is perhaps rather a bold thing to attempt a review of an official government publication of 500 pages, since the reader imagines at once page after page of statistics and tables, and the formal dry-as-dust statements of what today have begun to be perhaps little more than memories for many. But these fears may be abandoned, when a glance at the titles of the chapters is taken, and the plain simple story is read of how what had been at the time of the South African War a medical service little better than that of the Crimean War fifty years before, became, through the efforts especially of Sir Arthur Keogh, an organization too small, it is true, for all the medical needs, but so complete that when war broke out on August 4, 1914, the various units of the Royal Army Medical Corps went without a moment's delay to the precise posts they were to occupy, in an expeditionary force of 140,000 men who were engaged in battle in Flanders within twenty days thereafter.

The editor points out that rarely in any of the old wars did any medical history appear giving a consecutive account of the events, written within any reasonably short period, with the result that the opportunity was lost for studying the organization and development of work as it bore upon the different phases of a campaign. The present history is an admirable exception to this.

It is especially pleasing to the reviewer and will be to the members of the A. P. H. A. that the general desire for a medical history of the war in an acceptable form was brought to the attention of the British director general of army medical services through Professor Adami of McGill University, who may be fairly claimed as a

Canadian, since he was attached to the Canadian Army Medical Corps, and who wrote to Sir William Osler on the matter as early as September, 1914.

The volume gives us a brief summary of how the old and poorly organized medical service of the South African War was gradually replaced by a perfectly organized Royal Army Medical Corps equipped in every detail except in numbers, and notes the interesting fact that on July 3, 1914, for the first time the War Office, the British Red Cross, the Territorial Forces, and the St. John and St. Andrews Ambulance Associations appointed a joint committee for common action in the emergency of war. The total requirements of the first expeditionary force of 140,000 men were 800 medical officers, 9,000 other workers, and 528 nurses.

Chapter V deals with the hospital accommodation and gives us some idea of what the Great War meant, since while the military hospital capacity of the United Kingdom before the war was 7,000, it had increased at the time of the Armistice to 364,138 beds.

Chapter VII deals with the more interesting details of the man power of the people as illustrated by the results of the medical examinations of recruits, and categories of fitness are given which will serve for useful comparisons with those in America and Canada.

How the medical officers were trained in their duties is set forth fully with minute details of how medical and surgical supplies grew and how, step by step, experience brought about standardization of all sorts of equipment. The interesting item is given that 1,086,000 clinical thermometers were standardized and supplied.

Chapter X gives a most interesting account of the sanitary organization of camps in the United Kingdom and illustrates how the body of 3,000 county and borough medical officers of health trained in their routine health work became the basis upon which the sanitation of all military training camps grew up. Indeed it is not too much to say that the medical officers of health proved the solution of medical military problems both in Great Britain and America.

Every health officer interested in the advance of military hygiene and camp sanitation, who wishes to gain further efficiency through the account of how a simple medical corps grew into a great world life-saving army, will do well to obtain a copy of the British Official Medical History of the Great War, published under the authority of the British War Office. Intensely interesting is the account of the military operations in China, India, South and West Africa, with admirable photographs of hospitals, field ambulances and camps.

PETER H. BRYCE, M. D.

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Asthma and Hay Fever. *William Scheppegrell, A.M., M.D., president, American Hay Fever Prevention Association; chief, Hay Fever Clinic, Charity Hospital, New Orleans. Philadelphia: Lea and Febiger, 1921. Price $2.75.*

It seems fitting that Dr. Scheppegrell after many years' work on hay-fever and asthma should publish a monograph on these subjects, thus crystallizing knowledge which is still vaguely and erroneously held by both physicians and laymen. The author lays great stress upon the fact that only wind-borne pollen is important in producing symptoms. The reaction to the pollen is quantitative—the symptoms varying directly with the amount of pollen in the air. The popular conception that the golden-rod, daisy, and rose may cause symptoms of hay-fever receives a fatal blow, because the pollen of these flowers is too heavy and too large for wind distribution.

The study of the botanical characteristics of the plants, and the characteristics of the pollen grains, with excellent plates of both are given considerable space. The classification of the plants into four main groups, namely, the ragweed, the grasses, the wormwood, and the chenopod helps to simplify a very complex subject. There is an excellent table of hay-fever resorts in the various states. Prevention of hay-fever by means of legislation and illustrations of laws passed should stimulate others to demand similar or better laws for the public health. Atmospheric conditions in relation to symptoms is well covered. The method of testing the rooms of hay-fever patients by means of glycerine plates will help to solve some difficult problems.

Any one who has studied asthma in localities other than those in which the author has worked will be disappointed to find only half a page devoted to other than pollen proteins. Animal emanations, dust and food are hardly more than mentioned. Orris found in connection with face powders and often producing symptoms, is not even mentioned. This book will be found to be a very valuable adjunct to any one interested in the subject. However, one who expects a complete treatise on the "care, prevention, and treatment of hay-fever and asthma" will not be fully satisfied.

N. P. LARSEN, M. D.

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Ringworm and Its Successful Treatment. *John P. Turner, M. D. F. A. Davis Co., Philadelphia, 1921. Pp. 62. Price $1.00.*

The book is of great value on account of the definite line of treatment described.

The author fails to mention the X-Ray as a valuable method of treatment in the hands of an expert. Where X-Ray is not available, the school nurse should be supplied with a copy of the book, and the children made to follow the directions. Surprising results will be obtained.

R. N. TRIPP, M. D.

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The Venereal Clinic. *Ernest R. T. Clarkson, Wm. Wood & Co., New York, 1922. Pp. 475. Price $6.50.*

The introduction, which is written by Sir Squire Sprigge, M. D., editor of *The Lancet*, describes this book as an "up-to-date manual for the practitioner and student attending venereal disease clinics." It can hardly be called a manual, but rather is one inclined to look upon it as a compendium of the venereal diseases written by physicians who are engaged in dispensary activities. The arrangement of the material is happily conceived and is a departure from the usual text-book type. The illustrations add to the value of the book. The volume is divided into two parts, a medical part which is given over to diagnosis, pathology, and treatment of syphilis and gonorrhea in both sexes; and the second part, which deals with the sociological and administrative procedure in the care, treatment, and control of the venereally infected. The medical portion of the book is concise, well-written, and is the result of tried methods of the authors. The sections devoted to gonorrhea in the female, including vaginitis, show the importance of painstaking care in the management of these patients. The outstanding portions of the volume are the chapters devoted to sociological discussion, and every physician attending a clinic in which venereal diseases are treated should read this part of the work. There can be no doubt that the authors of this modest volume have fully recognized the opportunities for rendering their community a real service in the fundamentals of socio-sex hygiene and venereal-disease control. Venereal clinic executives, public-health administrators, nurses, social workers, and others interested in this phase of public-health activities, will find much material of value in this book.

WALTER B. BRUNET, M. D.

✚

Women in Chemistry. *Studies in Occupations, Number four. The Bureau of Vocational Information, New York: 1922. Pp. 272.*

This volume is a well-organized compilation of information necessary to women who desire to choose chemistry as their life-work. It is a valuable guide for all college and high-school students interested in choosing chemistry as a career. It contains a section devoted to opinions on the general attitude for and against women as manifested by their employers and associates (both men and women); qualifications and limitations of a chemist, which seem in the main from the point of view of the reviewer to apply equally to both sexes; a word about salaries and advancement; and an appendix. The latter includes lists of colleges admitting women to courses in chemistry; a list of prizes and grants, which is sometimes misleading as it includes prizes available to men only (cf. Bowdoin prize of Harvard University); fellowships and scholarships open to women, and a comprehensive list of publications on subjects related to chemistry. On the whole, the study shows a very hopeful future for women in chemistry. Many of the personal letters quoted indicate that the prejudice against women is being overcome by the demonstration of their ability in competition with men, and that the traditional "lack of initiative, mechanical ability, and originality" is yet to be proved when appropriate early training is provided.

MATHILDA M. BROOKS, PH. D.

PUBLIC HEALTH NOTES

Abstracts by D. Greene, M. D., James A. Tobey and Homer N. Calver.

Salary of M. O. H. for Manchester.—After conferences between the Manchester Town Hall subcommittee and representatives of the British Medical Association, a report on the subject of the remuneration to be paid to the medical officer of health for the city was presented to the committee on April 26. The report is something in the nature of a compromise; it was decided to advertise the vacant post offering a salary for the first two years of £1,500 a year, of £1,750 for the succeeding two years, and of £2,000 after that period, if the services of the officer appointed are deemed satisfactory.—*The Lancet*, London, May 6, 1922, p. 921.

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The Status and Salary of the Medical Officer of Health.—The enactment in 1921 of the Public Health (Officers) Act, which came into force on April 1 of the present year, coupled with the Sanitary Officers Order, 1922, recently issued by the Ministry of Health, to take effect from the same date, give for the first time to whole-time medical officers of health that security of tenure of their appointments, the absence of which in the past has subjected the progressive officer at times to the drawbacks of an ambiguous position. The medical officer has in many areas been liable to summary dismissal by an authority outraged at some indictment on his part of local affairs; though such treatment has occurred but rarely its possibility has certainly tinctured official life. Now such dismissal can take place only with the consent of the Ministry of Health. And in respect of part-time medical officers of health there is also a distinct improvement in the terms of appointment, under the new enactments, although the security of tenure is here, as would be expected, not so complete.

But it is only the publicity given to several recent appointments which has made it evident to the general public that the medical officer of health, even though his service status may be acknowledged in principle by the local authority employing him, does not in the majority of cases receive emoluments corresponding with his true position. The glaring instance of a northern town of over 400,000 inhabitants has been quoted in the press, in which the medical officer of health, responsible for the maintenance of health, receives less than £1,000 a year, while the gas manager receives over £2,500, and the sewage manager and the chief constable over £1,100 each. This is by no means a solitary instance of underpayment, though doubtless a somewhat extreme one. In the eyes of the average man of the world the status of an appointment can be measured roughly by the salary attached to it. There can be no doubt that the public health service is seriously handicapped by the inferior status implied in the low salary so commonly paid to its members. It is unfortunate, but by no means surprising, that under the circumstances there should have been of late a movement to discourage in the medical schools the entry of students into the field of public health, on the ground of its unattractive financial outlook. It would be a serious blow to the physical welfare of the country if that movement were to develop any degree of momentum. We would appeal to local authorities to take a long view of their responsibilities in the matter.—*The Lancet*, London, April 22, 1922, p. 813.

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Training for the D. P. H.—The Public Health Committee of the General Medical Council of England has recommended the following changes in courses of instruction to be provided graduates of medical colleges in England for the D. P. H.:

Proposed Regulations	*Present Regulations*
Minimum time after qualification before admission to final examination for diploma—Two years.	Nine months.
Minimum length of curriculum—One year.	Nine months.
Bacteriology and Parasitology, 180 hours; Chemistry and Physics, 90 hours—Five months.	240 hours.
Lecture Courses—100 hrs. Public Health and Sanitation .....30 Epidemiology .....20 Sanitary Law and Administration .....20 Sanitary Construction...12 Vital Statistics.....10 Meteorology and Climatology 8	Four months. Not compulsory, but a course of instruction in sanitary law and administration reduces outdoor work by one-half.

Infectious Disease Hospital—Three months.	Three months.
With 30 attendances	Six months, consisting of 60 attendances reduced to three months, 30 attendances, if lectures are taken.
Outdoor Sanitary Work—Six months.	
With 60 attendances	

Abstract of article in PUBLIC HEALTH, April, 1922, in *Public Health Engineering Abstracts*, June 10, 1922.

✣

Some Factors in Municipal Health Administration.—Until recently a health officer was considered to be a sort of necessary evil, one who went about posting placards on quarantined premises, making more or less successful attempts to stop the spread of disease. He usually received the minimum salary permitted by law, grudgingly provided by the municipal budget. At present prospects give promise of a brighter future, because of the education of the public to the importance of the duties of his office. By making the health officer the head of a department, responsible only to the public and the mayor or other municipal body, he is immediately thrown into the limelight. A term of service of four years is provided under a proposed law for second and third-class cities in New York, "unless the health officer is removed by the appointing power." This is a step in advance, but the time should be for life, being removable only after a hearing on sustained charges of neglect of duty or other causes, or retired on account of physical or mental inability; in the latter event a pension provision should be made.

Many of the health officers have taken advantage of the courses given at various universities on public health, at great expense in money and time, in order to better fit themselves for service. This is especially hard on the rural health officer who in many cases receives as low as $100 per month. It is hoped that under the new law the removal of ashes and garbage will be eliminated from the duties of the health officer, as only in exceptional cases does this concern the health department, and yet the amount expended for this is accounted as having been spent for health work.

Under paragraph 7 the law provides for the employment of experts, which makes it possible for a health officer to engage the service of specialists in an advisory capacity or for holding clinics on tuberculosis, venereal or other diseases, child welfare and for special sanitary surveys.

The state commissioner of health is thoroughly in sympathy with the general provisions of this bill, and it is to be hoped that those cities which have not already established independent departments of health will in the near future take steps to do so. The health administration in a number of the smaller cities is far from efficient, but the defects are thoroughly remediable. The principles embodied in this law will go far toward bringing this about.—Matthias Nicoll, Jr., M. D., New York State Department of Health, *Health News*, April, 1922.

✣

Physicians for Rural Districts.—Whereas the population of the state is increasing, the number of physicians graduated is decreasing. This year there will be about 300 graduates in the state, as against 750 a year 20 years ago. Some municipalities have no practicing physician who has been in practice less than 25 years, and out of 400 municipalities there are about 250 with no physician at all. The Public Health Council has prescribed that no one shall be appointed health officer who is over 65 years of age, but a number of municipalities have no physician under that age. In some localities, particularly in the Adirondacks, there is no physician within an area of 25 miles.

The requirements to become a physician are so great, taking 8 to 10 years of study after graduation from high school, that the medical colleges have limited their number of students, and the graduates find greater returns and facilities in the large cities, leaving the rural districts with fewer physicians than in former years, and with practically the same kind of medical care that was available 25 years ago.

Repeated efforts have been made to put through a bill that would provide state aid toward the establishment of rural community hospitals, public-health laboratories, clinics and public-health nursing service, for the question of medical service for the rural communities has become more and more serious. It has an important bearing on the death-rates and the reduction of infant mortality.—Herman M. Biggs, *Health News*, March 1922.

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National Health Council Issues Report on U. S. Bureau of Animal Industry.—As its name indicates, the U. S. Bureau of Animal Industry is concerned chiefly with the welfare of animals. Much of the work of this Bureau, however, relates to human health. In order to present a brief outline of the activities of the

Bureau, the National Health Council has issued a mimeographed report on the Bureau of Animal Industry. This report sets forth the legal authority, history, and development of the Bureau, its organization, personnel, and appropriations, and coöperation with other agencies. It is the eighth in a series concerning the health activities of the United States Government which has been issued by the Council. It is planned in the near future to combine all of these reports in a single printed pamphlet, thus offering for the first time correlated and accurate information concerning the public-health work of the United States Government. Copies of the report on the Bureau of Animal Industry or any of the other reports, may be obtained without charge from the Washington Office of the Council, 17th and D Streets, N. W., Washington, D. C.

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Index of Public Health Engineering Abstracts.—The Division of Domestic Quarantine, Section on Sanitary Engineering of the U. S. Public Health Service, has issued an attractive index to the *Public Health Engineering Abstracts* covering the year 1921. This Index is divided into three parts: 1. Author Index; 2. Subject Index, and 3. Magazine Index. This pamphlet is a valuable compilation of domestic and foreign literature on sanitary engineering and public health. The list of journals is very complete and forms a valuable reference list.—(*J. A. T.*)

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State Legislation for Physical Education.—The United States Bureau of Education has issued a new pamphlet on recent state legislation for physical education (Bulletin, 1922, No. 1). This compilation, which is issued over the names of Thomas A. Storey, Willard S. Small and Elon G. Salisbury, is a reissue of Bulletin No. 40, 1918, on the same subject. The pamphlet is divided into four parts, 1. Purpose and Scope of State Laws for Physical Education; 2. Tabular Summary of State Laws; 3. Principles Governing State Legislation for Physical Education; and 4. Text of State Physical Education Laws. Under Part One, Scope is further divided into (a) Prescription of age or grade limits; (b) Credit and graduation; (c) Time requirements; (d) Authority for prescribing courses; (e) Authority for enforcing courses; (f) Supervision; (g) Duties of state supervisors of physical education; (h) Local supervision and special teachers; (i) Qualifications and preparation of teachers; (j) Relation to medical inspection; (k) Financial support; (l) Relation to military training. Each of these subjects is discussed with reference to all of the states having laws. Since June, 1915, 25 states have enacted legislation relative to physical education.—(*J. A. T.*)

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Preservation of Health.—Surgeon General Merritte W. Ireland is perfecting physical tests and an annual physical examination for the commissioned personnel of the Army, with a view of obtaining statistics in regard to the cause of defect and disease and the building up of a system of physical conservation that cannot but result in increased efficiency, prolongation of life and the general preservation of health. It is his idea that from this selected field of observation many important conclusions can be reached that will enable the Medical Department of the Army to communicate to the nation at large valuable principles concerned in disease prevention and health preservation, which will eventually make a most valuable contribution to the cause of national good health.—*Red Cross Courier*, May 27, 1922.

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Smithsonian Institution to House Public Health Exhibit.—The National Committee on Exhibits Showing Advances in Sanitary Science has recently been formed in Washington, D. C., for the purpose of collecting and preparing material for a great popular public-health exhibit in the capital. Space for the proposed exhibit has been placed at the disposal of the committee by the Smithsonian Institution, which is visited by more than half a million persons annually.

✣

Prudential Collection for Surgeon General's Library.—The Prudential Insurance Company has donated to the Surgeon General's Library of the United States Army at Washington its collection of books, documents and data, estimated to represent 90 per cent of the entire public-health material of the civilized world, and containing between 50,000 and 100,000 volumes and publications. These were brought together during the last 30 years by Dr. Frederick L. Hoffman, the Prudential statistician. The gift has been approved by the surgeon general of the army and the secretary of war, and a place is being prepared for its reception.—*Science*, June 16, 1922, p. 641.

Prevention of Blindness.—The Seventh Annual Report of the National Committee for the Prevention of Blindness, recently issued, is a compend of current information and methods in regard to the blind. Some of its important data follow:

In 28 schools for the blind and 11 classes for the blind in public schools, statistics show that 21.9 percent and 22 percent respectively of the pupils are blind due to ophthalmia neonatorum, but for new admissions during 1920 and 1921 the percentages have dropped to 13.7 and 13.5 respectively. At best, however, these statistics can be regarded only as a general indication of results obtained from continued effort. They cannot be considered medically accurate (except in case of schools having the services of oculists), since the report of parent or guardian is in many instances the only source of data. However, they are the best obtainable.

The report of the Illinois Survey on trachoma is a noteworthy contribution to all states facing this problem; it explains the inauguration of the work against this most painful eye disease, and the methods of carrying it on. Tennessee, Kentucky, and Missouri have been holding clinics of the United States Public Health Service in coöperation with local agencies. Minnesota is making every effort to open the White Earth Hospital to give the Chippewa Indians a chance for treatment, 20 per cent of whom are suffering from trachoma. A committee has been appointed by the Ophthalmological Society to obtain funds for scientific research into the causes of this disease.

The United States Census of the blind for 1920 shows 52,617 blind persons as against 57,272 in 1910. The National Committee for the Prevention of Blindness is keenly appreciative of the comment of the report, which suggests that a decrease in preventable blindness is indicated as a result of improved medical knowledge and the education of the public. It cannot, however, accept these figures, as it contends that the figures of 1910 were too conservative. Judging from verification of reports in New York State, the Committee believes that there are probably 105,000 blind persons in the United States, and that in all probability the 1910 census was as conservative as the 1920 census, thus indicating a still greater decrease in the percentage of preventable blindness.

New Vice-President of Society for Visual Education.—Edward Stuart, formerly in charge of health education and publicity for the Rockefeller Tuberculosis Commission in France and the League of Red Cross Societies in Geneva, Switzerland, and recently in charge of the Motion Picture Bureau of the American Red Cross, has resigned from the latter to become vice-president of the Society for Visual Education, an organization which produces and distributes educational motion pictures for use in the non-theatrical field. This organization has recently been appointed agent of the American Red Cross in the distribution of a large library of Red Cross films taken during and since the war.

✣

Harvard School of Public Health.—This school is the outgrowth and continuation of the school jointly conducted under Harvard University and Massachusetts Institute of Technology which was established in 1913. Prior to this, Harvard Medical School offered courses leading to the degree of Doctor of Public Health, conferred for the first time in 1911.

The new school is now organized and in September, 1922, will open prepared to offer systematic courses of instruction and appropriate degrees. The medical degree of M. D. is a prerequisite for the degree of Doctor of Public Health, but not for the Bachelor of Public Health, the Master of Public Health, or the Doctor of Philosophy in Hygiene. Special opportunities are offered to research students who may desire to investigate special health problems or to make surveys without reference to a degree. A limited number of fellowships of $1,200 each will be offered. Applications for fellowships should be filed with the secretary of the School of Public Health at least four months prior to the opening of the school.

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National Cancer Week.—The second National Cancer Week will be conducted November 12-19, 1922, by the local committees of the American Society for the Control of Cancer, in coöperation with all those official and volunteer agencies which gave such notable assistance last year. The Society now has 665 cancer committees, and it is hoped to double this number before November. Literature is now being prepared, and every effort is being made to secure

the coöperation of all state and local health departments, clubs, lodges, and chambers of commerce, as well as merchants' associations and organized groups of employers, labor unions and employees, toward this great life-saving movement.

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Training of Hospital Executives.—The Committee on the Training of Hospital Executives, appointed at a conference called by the Rockefeller Foundation in 1920, in its recent report recommends that a course or courses of training for hospital executives be inaugurated under University auspices. A record is given of the number and capacity of hospitals in the United States and their facilities for training hospital personnel, laboratory workers, social workers, physicians and nurses.

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Correspondence Course in Public Health Nursing.—The New York University and Bellevue Medical College announces that in coöperation with the New York State Department of Health it will give a correspondence course in public-health nursing in the state of New York, open to all registered nurses, to begin September 5, 1922. The course will call for ten hours' weekly study for a period of forty-eight weeks, and will cover instruction in all the various phases of public-health work in which nurses are engaged, such as maternity and child hygiene, communicable diseases and bacteriology, vital statistics, community and home hygiene and sanitation, industrial hygiene, occupational diseases, mental hygiene, and the principles of community organization and administration. In the latter part of the course one week of study in residence in either New York City, Buffalo, Syracuse or Albany will be required. A matriculation fee of $5.00 represents the entire expense outside of living expenses during the week of residence work and the purchase of the necessary text books. A certificate will be given on completion of the course. Application may be made at once. Address all communications to Edward H. Marsh, Room 804, 25 West 45th Street, New York City. It is hoped by this means to increase the number of women qualified for paid positions in the health service of the state.

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Treatment of Meningococcus Meningitis.—In a very comprehensive review of the literature the author discusses the advances that have been made in the treatment of meningococcus meningitis, and in hygienic measures which must be taken. Free ventilation, isolation, and a proper amount of space are as necessary for the treatment of patients as for the prevention of the disease. Attention should be given to the prevention of overfatigue and the control of rhinopharyngeal infections. The prevention of infection of attendants in charge of patients is chiefly concerned with the discharges from the rhinopharynx. Concerning the treatment of carriers, fresh air and sunshine have an important and favorable influence on the rapidity with which the meningococci disappear from the nasopharynx. Chronic inflammatory conditions of the rhinopharynx require appropriate treatment. Aside from these measures the efforts to hasten the disappearance of the meningococci in convalescent patients and carriers by antiseptics have been most discouraging. Active immunization by means of meningococcus vaccines is still in the experimental stage. In the presence of clinical meningitis the method of serum therapy is described. It has recently been shown that when intravenous injections of serum are combined with the intraspinous treatment the meningococci disappear from the cerebrospinal fluid more rapidly than when intraspinous therapy alone is used. In the average uncomplicated case of this disease serum treatment is discontinued when the cerebrospinal fluid becomes clear and the organisms can no longer be demonstrated in smears or in culture.—K. D. Blackfan, *Medicine*, May, 1922, 139.—(*D. G.*)

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On the Eradication of Diphtheria.—In an article entitled, "Is the Control of Diphtheria Leading to Eradication?" the author analyzes the factors underlying present day procedures for the control of diphtheria. By eradication he means such perfect control of the factors of a disease that epidemic spread becomes impossible. He concludes that the eradication of diphtheria will not come through the serum treatment of patients, by the immunization of the well, nor through the accurate clinical and laboratory diagnosis of the case and the carrier followed by quarantine; rather it will be attained through the mass sanitary protection of the populace, subconsciously practiced by the people at all times.—J. G. Cumming, *Jour. Amer. Med. Assoc.*, March 4, 1922, 630.—(*D. G.*)

Swimming Pool Conjunctivitis.—Attention has recently been directed to an acute follicular conjunctivitis observed in several persons frequenting a municipal swimming pool in Paris. Although this form of conjunctivitis is not so serious as granular conjunctivitis, it cannot be considered as benign, since it hampers visual functions considerably. Upon inquiry it was found that this pool was used by workmen living in that quarter of the city, from 350,000 to 400,000 people using it yearly. It is fed by the Seine river and the water is filtered in winter only by means of sand filters. The pool is scrubbed every Tuesday and the water renewed. All bathers are expected to use the shower before entering the pool, but in reality only a few of them do it, and the water, which is renewed only once weekly and heated to 80° F. becomes rapidly an excellent culture medium. It was noted that all the patients were males. This is attributed to the fact that the water is changed on Tuesday, and that Wednesday afternoon is reserved for women.—Foreign Letter, *Jour. Amer. Med. Assoc.*, June 3, 1922, 1733.—(*D. G.*)

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Experimental Rickets.—Studies made to determine the effects on growing rats of diets deficient in calcium, but which contain a sufficient supply of the fat soluble A vitamin and an approximately normal content of phosphate, show that these rats develop a pathological condition of the bone which has certain fundamental resemblances to human rickets. The rickets-like condition of the bones does not develop if the deficiency in calcium is compensated for by the addition to the diet of calcium carbonate or if the animal is allowed to receive cod liver oil. Since this pathological condition in the skeleton is in no way prevented by an amount of butter fat which is amply sufficient to protect the animals against keratomalacia, it is necessary to assume that butter fat exercises a very feeble influence in protecting animals against the development of rickets-like lesions.—E. V. McCollum, N. Simmonds, P. G. Shipley, and E. A. Park, *Amer. Jour. of Hygiene*, July, 1921, 492.—(*D. G.*)

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Disinfecting Skins and Hair for Anthrax.—In this article are given details of several tests carried out on the disinfecting of skins and horsehair for anthrax. The tests on skins showed that (1) the lime soak of 5 per cent (CaO) permitted by the Bureau of Animal Industry regulations proved to be unreliable even after a 72-hour exposure. (2) The Schattenfroh method of soaking skins in 2 per cent HCl and 10 per cent NaCl solution for 48 hours at room temperature gave uniformly good results if carried out under conditions similar to those employed in the tannery. Anthrax-infested horsehair can be satisfactorily disinfected by several methods; (1) by steam under pressure in the autoclave (15 lbs.) for 30 minutes; (2) by dry heat 200° F. for 24 hours; (3) by formaldehyde as used in England. Cyllin disinfectant in the strength and under the conditions certified in England will not kill anthrax spores.—H. F. Smyth, *Amer. Jour. of Hygiene*, Sept.-Nov., 1921, 541 (*D. G.*)

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How Long Does the Mosquito Retain Malaria Parasites?—A writer in the *Public Health Reports* describes experiments as to the longevity of the Anopheles mosquitoes and as to the period during which they may retain the malaria protozoa. He found that 85 specimens of *Anopheles punctipennis* lived an average of 90 days and one survived for 231 days. A single specimen of *Culex territans* survived 265 days on a diet of fruit juices.

Plasmodia of malaria proved to be viable by inoculation into the human host from the bite of a mosquito infected 55 days previously. Mosquitoes failed to convey malaria plasmodia through their biting, 61, 66, and 67 days, respectively, after becoming infected. These three mosquitoes were kept under conditions identical with those in which viable sporozoites were demonstrated in the five specimens mentioned above.—U. S. *Public Health Reports*, May 5, 1922. (*J. A. T.*)

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Requirements of State Child Labor Laws.—Comparing the standards prescribed by state child labor laws with the standards of the federal child labor tax law, which was declared unconstitutional on May 15, 1922, it is found that the laws of the following 13 states measure up in all particulars to the standards of the federal law: Alabama, Connecticut, Illinois, Indiana, Kansas, Kentucky, New York, Ohio, Oklahoma, Oregon, Tennessee, West Virginia, and Wisconsin. Certain other states come fully up to one or more of the standards but fail in regard to others. Of these, 14 come up to the standard in regard to age; 13 and the District of Columbia in regard to hours, 12 and the District of Columbia in re-

gard to night work; and 12 in regard to the minimum age for work in mines and quarries. The states which fall below the federal standards in all respects are Delaware, Mississippi, and Wyoming.—*Weekly News Summary*, U. S. Children's Bureau, June 10, 1922. (*J. A. T.*)

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Administration of Maternity and Infancy Act.—The appointment of Dr. Ethel M. Watters of San Francisco as consultant in the administration of the Sheppard-Towner Maternity Act has been announced by the U. S. Department of Labor through the Children's Bureau. Dr. Watters has been director of the Bureau of Child Hygiene in the California State Board of Health since 1919, and is a well-known pediatrician. She becomes a member of the staff of the Federal Children's Bureau, which is charged with the duty of administering, in coöperation with the states, the federal funds appropriated for promoting the welfare and hygiene of maternity and infancy. Dr. Watters studied medicine at Leland Stanford Jr. and Johns Hopkins Universities, receiving her degree from the latter.

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The Committee for the Study of Nursing Education.—A committee established in 1919 for the study of nursing education recently made public a general report on the problems of training nurses for the care of the sick and for the prevention of diseases. The original conference which resulted in the appointment of this committee was called by the Rockefeller Foundation, which has also given financial support to the investigations conducted under the auspices of the committee. Dr. C.-E. A. Winslow is chairman, and Miss Josephine Goldmark, secretary.

After making a thorough analysis of the situation the committee has agreed upon a comprehensive plan of nursing service embracing the three following grades:

1. The trained registered nurse for the care of the acutely ill, the present training course of three years to be enriched and improved and at the same time reduced 20 per cent in length, without lowering standards.

2. The public-health nurse, the supervising nurse, and the teacher in schools of nursing, who are to receive specialized postgraduate training in addition to the standard course for registered nurses.

3. The subsidiary nursing worker, to be trained by an 8 or 9 month course and licensed as nursing aide or nursing attendant for the care of minor and chronic illness and convalescence.

The report lays particular emphasis upon the necessity of financial support—which has never yet been provided—for all forms of nursing education.

The public-health nurse has proved to be the best missionary to carry the message of health into the individual home. In order to meet the generally accepted standards, 50,000 public-health nurses are needed as against the 11,000 now in the field. It is the judgment of the committee that the public-health nurse should be equipped with as rigorous a training as the bedside nurse, further supplemented by special studies along lines of public health and social service.

By a better organization of the course of study in the regular hospital training schools, and the elimination of excessive routine service, it is proposed to shorten the period of training from three years to two years and four months, and still maintain the same educational standards. The working day should also be reduced to eight hours.

The proper training of nurses will cost considerable, and if the community needs and desires the services of competent nurses, it must pay for their education, and not leave the whole burden of education on the hospitals, who should be relieved from the dilemma of exploiting student nurses on the one hand, or of diverting funds given for the care of the sick on the other, by the provision of endowments specially devoted to the purpose of education.

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Commonwealth Fund Child Health Program.—One of the most important programs ever undertaken for the betterment of the health of the children of this country has just been announced by Courtenay Dinwiddie on behalf of the Commonwealth Fund. This fund has decided to finance a thorough child-health program in three typical cities for a period of five years. The program will comprise safeguarding the health of the mother-to-be, laying a good health foundation for children in the early, sensitive, and formative period of their growth and health supervision and the formation of the essential health habits in school children. The responsibility for carrying out this work is placed upon the American Child Hygiene Association and the Child Health Organization of America. A joint

committee representing these organizations together with the National Child Health Council, the National Health Council and the Commonwealth Fund will have charge of all general policies and plans. This committee has elected as its officers Barry C. Smith, chairman; Philip Van Ingen, M. D., treasurer; and Courtenay Dinwiddie, executive secretary, and has established offices at 532 Seventeenth street, Washington, D. C. Work has already begun and after careful consideration the committee has decided that the first city to be assisted in developing the thorough program for child health will be selected from the upper Mississippi valley region. The general qualifications of this city are that it must be from 15,000 to 25,000 in population, with an infant mortality rate of approximately 100 per thousand live births, or greater. It must also show a desire to coöperate in the work during the five-year period and a reasonable prospect of assuming the responsibility for carrying it on in the future. Two other cities are to be selected in other sections of the country after work has been well started in the first. The work will be developed in each community so as to enlist the full coöperation of the Health Department, the physicians, the public-health nurses, the schools, teachers, and all other individuals and agencies interested in health and child welfare. If the cities in which the demonstrations take place devote every available resource to making them practical working programs for all communities, a valuable contribution will be made in the development of methods for the care and health education of all children.

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Child Labor Amendment to Be Sought.—"Federal protection must be restored to American children through amendment of the Constitution and the passage by Congress of another child labor law," declared Owen R. Lovejoy, general secretary of the National Child Labor Committee, addressing the Seventeenth National Conference on Child Labor at Providence, R. I., June 27.

Mr. Lovejoy announced this as the policy officially adopted by the National Committee, saying that any further attempt to secure federal legislation without a constitutional amendment would be folly now that the U. S. Supreme Court has successively found two federal child labor laws invalid on constitutional grounds. He said that the demand for an amendment comes from all over the country, including the South, where states' rights feeling is so strong. He quoted a telegram from Governor Thomas E. Kilby of Alabama favoring "an amendment empowering Congress to enact laws for the regulation of child labor."

The amendment suggested by the National Child Labor Committee, and read at the convention by Mr. Lovejoy, is as follows:

"Congress shall have power to regulate or forbid the labor of minors at an age, or under conditions deemed injurious to their health or morals. Such power shall be concurrent and not exclusive, and the exercise thereof by Congress shall not prevent any state from adopting other or further regulations, not inconsistent therewith."

Mr. Lovejoy said that this draft amendment protects the right of the states to go as far as they like, but enables Congress to set a minimum standard of national decency. It is intended, before this amendment is introduced in Congress, to submit it for approval to the Permanent Conference for the Abolition of Child Labor formed in Washington recently by representatives of national civic organizations.

The National Child Labor Committee, though it has entered into an active campaign for a federal amendment, will not diminish in any way its present efforts to improve state laws and administration.

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The European Anti-Epidemic Conference.—An important anti-epidemic conference was held in Warsaw, March 20-28, 1922. The conference was convened by the Polish Government, with the approval of the Council of the League of Nations and the help of the League Secretariat and Health Organization. The 27 powers attending the conference were Austria, Belgium, Bulgaria, Czecho-Slovakia, Dantzig, Denmark, Esthonia, Finland, France, Germany, Great Britain, Greece, Holland, Hungary, Italy, Japan, Latvia, Lithuania, Norway, Poland, Roumania, Serb-Croat-Slovene State, Soviet Russia, Soviet Ukraine, Spain, Sweden, Switzerland, and Turkey.

The object was to draw up a detailed report on the epidemic situation in eastern Europe, and submit plans for an international campaign. Russia has been ravaged by disease during the last four years, as a result of conditions arising from the war and revolution. The diseases most rife are typhus, relapsing

fever, and cholera. Of these the first two may be said to have become pandemic in Russia, and have increased more than thirty-fold as compared with their prevalence before the war.

The task of disease control has proved such a crushing burden to the border states, and is so obviously a matter affecting the whole of Europe, that as early as 1920 the Council, at the instance of the first Assembly, set up a League Epidemics Commission to assist in the work of fighting epidemics in east Europe. Last summer epidemics showed a distinct downward trend in both Russia and the border states, but in the autumn the famine on the Volga and in the Ukraine caused new waves of emigration, increasing the susceptibility to disease of the whole population, resulting in such an alarming increase of epidemic incidence that the Council felt impelled to issue a further urgent appeal to the governments that had undertaken to contribute to the funds of the Epidemics Comimssion to pay in the sums promised. This in turn led to the convening of the present conference by the Polish Government, with a view to preparing the ground for a continuation of the international anti-epidemic campaign on a larger scale.

The conference drew up a detailed plan of campaign, estimated to cost a million and a half pounds sterling, for definitely overcoming the menace of epidemics. This plan is divided into (a) immediate measures for checking the spread of epidemics beyond the borders of Russia and (b) a scheme of aid to the Russia and Ukrainian health services in an attack on the centers of infection. In this connection the conference registered its opinion that a purely defensive campaign on the frontiers of Russia would merely prolong the problem indefinitely, thus causing more expenditure in the end than a decisive anti-epidemic offensive undertaken for the purpose of quelling the epidemics at their source. The payment of the necessary monies for this campaign should be on a scale similar to that for payment of the League budget by members of the League. The conference also resolved that the execution of these measures and the control of the campaign should be entrusted to the League Health Organization and Epidemics Commission, and added a rider insisting on the necessity for all states that take part in this campaign being represented on these organizations. The Soviet Russian and Ukrainian delegations alone abstained from voting on this measure, and presented instead an amendment asking that a special international commission, on which all the powers concerned should be equally represented, be entrusted with the control of the anti-epidemic campaign. Finally, the conference approved a draft designed to serve as a model for a series of sanitary conventions to be concluded between the central and east European states taking an active part in the anti-epidemic campaign.

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Social Insurance Law in Jugoslavia.—The maternity benefit clauses of a new social insurance law went into effect early in 1922. In addition to the free medical treatment, sick benefit, medicines, and medical supplies received by all insured women in case of sickness, the insured mother is entitled to the services of a midwife, medical treatment if necessary, and a benefit amounting to three-fourths of the basic wage for 2 months before and 2 months after confinement. In the case of a live birth, the woman receives a premium equal to 14 times the basic daily wage. If the mother nurses her child, she receives a nursing benefit to be paid for 20 weeks, beginning with the third month after confinement. Non-insured wives of insured men receive in case of childbirth the necessary medical care, a benefit for 4 weeks before and 4 weeks after confinement, and the same premium as the insured woman.—*Sociale Praxis*, March 15, 1922. (*J. A. T.*)

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An International Congress for Health Education will take place in Paris, December 18 to 23, 1922. Doctors and public-health workers, teachers, and all who are interested in moral and social welfare work are invited to attend. The congress will give special consideration to the question of sex education from the point of view of the individual, of the family and of the race, and to the organization of prophylactic sex teaching among both sexes of every class. The program of the congress is divided into five sections: (1) General hygiene; (2) venereal diseases; (3) venereal prophylaxis; (4) sex education; (5) measures to be taken. In this latter section is included for consideration "the rôle of the Red Cross in the organization of health education and health propaganda." Further details may be obtained from the secretary-general of the Congress, M. Emile Weisweiller, 7 rue Mignon Paris.—*World's Health*, April, 1922.

Child Welfare in Denmark.—The government of Denmark is intending to amend the child welfare laws. A committee has already prepared a bill relating to parental authority and providing for the establishment of guardianship councils and public institutions for dependent children. A provision of the bill forbids the sale of tobacco to children under fourteen years of age and prohibits children from smoking in public places. A new law permits the state to distribute annually 250,000 crowns to municipal and private agencies for the establishment of day nurseries, trade schools, and vacation colonies for school children.—*La Protection de l'Enfance,* February, 1922. (*Mother and Child,* June, 1922, p. 24.)

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International Congress of the History of Medicine.—The third International Congress of the History of Medicine will be held in London from July 17 to 22. The congress will be opened by the minister of health at the house of the Royal Society of Medicine, after which foreign delegates will be received, and Dr. Singer will give his address. Receptions and meetings will be held at the Royal College of Physicians, Royal College of Medicine, the Mansion House, Royal College of Surgeons. Visits will be made to various places of interest, including Hampton Court Palace and St. Bartholomew's Hospital.—*Science,* June 16, 1922, p. 635.

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LEGISLATION — FEDERAL

(From bi-weekly reports of the National Health Council, May 15-June 15, 1922)

PROGRESS ON MATTERS PREVIOUSLY CONSIDERED

H. R. 10972. Pay of Army, Navy and Public Health Service. After having passed the House May 12, and Senate May 22, and having been satisfactorily adjusted in conference, this measure was sent to the White House on June 7, for the President's signature. The bill as finally passed is said to have met with approval among the commissioned personnel of the U. S. Public Health Service as well as the medical officers of the army and navy. (A table summarizing the provision for base service pay of officers was published in the A. J. P. H. for May, 1922.) If the cost of food in subsequent years should be reduced, the allowance for subsistence will be accordingly reduced. There is also an increase for length of service in the grade.

H. R. 10871. Army Appropriation Bill.—Passed the House, March 29, 1922. Passed the Senate with amendments, June 2, 1922. The bill as amended fixed the strength of the army at 133,000 men and 12,530 officers. $1,800,000 was appropriated by an amendment in the Senate for civilian military training camps, and $2,700,000 for the Officers Reserve Corps, the pay being increased in the Senate from $250,000 to $2,000,000. Reduction of the commissioned personnel from its present size to the figure named in the bill is to be accomplished through a selection board of general officers appointed by the President. (A. J. P. H. June.)

H. R. 2193. Habit Forming Drugs.—This bill, which passed the House on May 4, and the Senate on May 12, 1922, was signed by the President on May 26. S. J. Res. 201. Introduced by Mr. McNary, May 26, 1922. Referred to Committee on Foreign Relations. This resolution requests the President to propose an international conference for the suppression of the use of narcotic drugs, except for medical purposes. The purpose of such a conference would be to secure uniformity in narcotic legislation.

H. R. 8086. Prohibiting "Filled Milk."—Passed the House, May 23, 1922. This bill makes it unlawful to manufacture within any territory or possession or the District of Columbia, or to ship in interstate commerce any milk or milk product which has been blended with fat or oil other than milk fat. A penalty of $1,000 or a year's imprisonment, or both would be imposed for violation of the proposed act.

H. R. 7746. Regulation of Milk in the District of Columbia.—Favorably reported in the House, May 17, 1922. The object of this bill is to secure for the District of Columbia a clean, pure, and wholesome milk supply. It would require annual permits to be issued to dairies and dealers by the District Health Officer, would grade all milk, and would require the tuberculin test at least once a year for all grades. The health officer is given the power to suspend permits for cause, and to seize any milk coming into the District in violation of the law. Communicable diseases on dairy farms would be reported, according to the terms of the bill.

The Federal Maternity and Infancy Act. Opinion of the Attorney General of Massachusetts.—Forty-two states have now accepted the terms of the Act for the promotion of the welfare and hygiene of maternity and infancy. Since the recent opinion of Attorney General J. Weston Allen of Massachusetts, declaring this Act to be unconstitutional is of interest to sanitarians, we are including an abstract of it. This opinion, of course, has no effect at law. If Massachusetts should bring a suit in equity against those federal officials charged with the administration of the Act, the United States Supreme Court, having original jurisdiction, would try the case and decide the constitutionality of the Act. The attorney general, in presenting his opinion to the Massachusetts legislature, argues that:

a The Constitution does not give the Federal Government power to regulate the internal affairs of any state such as would occur in the enforcement of the Maternity and Infancy Act, whereby the Children's Bureau would actually have control of internal affairs of the states.

b The Act vests in the Federal Government certain powers relating to maternity and infancy that manifestly fall within the scope of the police power reserved specifically to the states in the Constitution by the Tenth Amendment.

c It is illegal for the state governments to yield powers granted to them by the Constitution and such powers can only be granted to the Federal Government through an amendment to the Constitution.

d The Act cannot be legalized upon the ground that it comes within scope of the "general welfare clause" of the Constitution as this clause conferred no power on Congress to enact legislation for general welfare, but was placed there to limit the taxing power of the Federal Government.

e The maternity and infancy statute is not an appropriation measure, but an attempted exercise of power over maternity and infancy, and is not even for the general welfare of the United States but only for certain states.

Many cases and court decisions are cited in support of this reasoning. A complete copy of the opinion appears in the *Congressional Record* for May 11, 1922, beginning on page 7371.

H. R. 11588. Giving Government Authority to secure land for hospital facilities by condemnation proceedings. — Passed the House June 5, 1922. Refusal of land owners in the vicinity of the Dawson Springs Sanatorium, Dawson Springs, Ky., to renew leases on land to be purchased for the benefit of the hospital recently built there at a cost of $2,500,000 resulted in the introduction of this bill in the House by Representative Kincheloe. After being favorably reported by the Committee on Public Buildings and Grounds it was passed without a record vote under a unanimous consent agreement. A similar measure has been presented to the Senate by Senator Stanley of Kentucky. The provisions of the bill are general in terms, giving the Secretary of the Treasury power to exercise the right of eminent domain and purchase property needed for government hospitals by condemnation proceedings in the federal courts.

H. R. 11589. Transfer of Leprosarium to Territory of Hawaii.—This measure, which provides for the transfer of the lands and buildings of the Federal Leprosy Investigation station at Kalawao, on the island of Molokai, to the territory of Hawaii, was favorably reported to the House of Representatives on June 8, by the Committee on Territories. The bill was placed on the House calendar.

H. R. Res. 297. International Conference to prevent pollution of navigable waters.—Passed the House June 5, under suspension of rules. This resolution requests the President of the United States to call a conference of maritime nations to adopt means for preventing the pollution of navigable waters by oil-burning and oil-carrying steamers. (A. J. P. H. June.)

S. 1911. Compensation for Federal Employees suffering injuries while in performance of duties.—Passed the Senate June 2, 1921. Passed the House June 5, 1922. This bill is an amendment to the Employees Compensation Act and empowers the United States Employees Commission to receive claims for injuries from employees sixty days after the date of injury, and also to receive claims for compensation for death within one year after the death. The purpose of the amendment is to extend the time of filing claims for the benefit of certain federal employees who would not receive benefits under the present law. The bill has gone to the President.

H. R. 10496. Free Mailing Privileges for publications for the Blind.—This bill, introduced into Congress by Miss Robertson of Oklahoma, passed the House on June 5 unanimously.

H. R. 11040. Sale of Marine Hospital in Cleveland.—Reported by the Committee on Public Buildings and Grounds, June 12, 1922. (A. J. P. H. June.)

NEW LEGISLATION

(Matters Not Previously Considered)

H. J. Res. 327. Regulation of Child Labor.—Introduced by Representative Fitzgerald, May 17, 1922. Referred to the Committee on the Judiciary. This bill proposes an amendment to the Constitution as follows:

Article

"The Congress shall have the power to regulate throughout the United States the employment of persons under 18 years of age."

A similar resolution (H. J. Res. 332) was introduced on May 24 by Representative Perlman.

H. R. 11707. Introduced by Representative Huddleston, May 19, 1922. Referred to the Committee on Interstate and Foreign Commerce. This bill would regulate interstate commerce in the products of child labor.

Decision of the U. S. Supreme Court on the Child Labor Tax Law.—On May 15, 1922, the U. S. Supreme Court handed down an opinion in the case of J. W. Bailey, Collector of Internal Revenue, etc., vs. the Drexel Furniture Company which held Title XII of the Revenue Act of 1918 to be an interference with state rights and as such unconstitutional. Briefly, Title XII provides that every person operating (a) any mine or quarry in which children under the age of 16 years have worked during any portion of the taxable year; or (b) any mill, cannery, workshop, factory, or manufacturing establishment in which children under the age of 14 years have worked or children between the ages of 14 and 16 years have worked more than 8 hours a day or more than 6 days a week, or after the hour of 7 at night or before the hour of 6 in the morning, shall pay, in addition to all other taxes, an excise tax of 10 per cent on the entire net proceeds received from the sale of the product of such mine, quarry, etc. The law was attacked on the ground that it was a regulation of the employment of child labor in the states—an exclusive state function under the Federal Constitution and within the reservations of the Tenth Amendment. It was defended on the ground that it was a mere excise tax levied by the Congress under its broad power of taxation conferred by Section 8, Article I, of the Federal Constitution.

In delivering the opinion Chief Justice Taft stated that the Court was of the opinion that obviously the legislation was aimed at restriction and regulation of the employment of child labor, and was not merely for the purpose of raising revenue. If such legislation were allowed, it would break down all constitutional limitations of the powers of Congress and completely wipe out the sovereignty of the states. The tax is called a penalty to coerce the people of a state to act as Congress wishes them to act in a matter which is strictly state business. "The good sought in unconstitutional legislation is an insidious feature because it leads citizens and legislators of good purpose to promote it without thought of the serious breach it will make in the ark of our covenant or the harm which will come from breaking down recognized standards," was a significant statement. The first Federal Child Labor Act of September 1, 1916, was declared unconstitutional on June 3, 1918, by the U. S. Supreme Court in the case of Hammer vs. Dagenhart (247 U. S. 251).

H. J. Res. 240. Amendment to Constitution on Child Labor.—Introduced by Representative Tague, May 31, 1922. Referred to the Committee on the Judiciary. This amendment would give Congress the authority to regulate, limit and prohibit the employment of persons under eighteen years of age. It is similar in language to the resolutions for a Constitutional amendment upon the same subject introduced in the House by Representatives Fitzgerald and Perlman.

S. 3629. Pensions for Red Cross Nurses.—Introduced by Senator Calder, May 20, 1922. Referred to the Committee on Pensions. A pension of $20 a month is given all women employed by the Surgeon General of the Army or Navy as nurses under contract or otherwise or who were employed by the American Red Cross or who rendered actual service as nurses for thirty

days or more during the war with Spain and the Philippine insurrection. Senator Calder also submitted on May 20 an amendment to H. R. 4 proposed to be offered by him. It would include Red Cross nurses in this latter pension bill. (A. J. P. H. June.)

Miscellaneous

S. 3616. Encouragement of public, quasi public and coöperative associations to slaughter live stock and operate stockyards. Introduced by Senator Norris, April 20, 1922. Referred to the Committee on Agriculture.

H. R. 11721. Reclamation of land in Alabama to be used by disabled U. S. Veterans. —Introduced by Representative Bankhead, May 20, 1922. Referred to the Committee on Irrigation of Arid Lands. This measure authorizes the Secretary of the Interior to obtain possession of 50,000 acres of arid land and reclaim it in the State of Alabama, and also authorizes the U. S. Veterans Bureau to establish a temporary school of instruction for disabled war veterans thereon.

S. 3665. Additional Funds for Treatment of Leprosy.—Introduced by Senator Ransdell, June 1, 1922. Referred to the Committee on Appropriations. The sum of $650,000 would be appropriated by this proposed act to enable the Secretary of the Treasury, through the U. S. Public Health Service, to provide care and treatment for persons afflicted with leprosy. The money, should the bill become a law, would be used in improving the government leprosarium at Carville, Louisiana, and also for the transportation and care of patients at that institution, as well as for the prevention of the spread of leprosy in the United States.

H. R. 11823. Authorizing issuance of bonds for compensation due disabled war veterans. —Introduced by Representative Vaille, May 27, 1922. Referred to the Committee on Interstate and Foreign Commerce. An amendment to the War Risk Insurance Act, this legislation permits the Director of the U. S. Veteran's Bureau to issue a bond with coupons covering compensation due veterans disabled in the world war. The purpose of the amendment is to eliminate the necessity of mailing checks monthly to beneficiaries.

H. R. 11970. Bureau to Study Criminal, Pauper, and Defective Classes.—Introduced by Representative Walsh, June 9, 1922. Referred to Committee on Judiciary.

S. 3700. Introduced by Senator Spencer, June 10, 1922. Referred to Committee on Education and Labor.

H. R. 11967. To Enlarge the Powers of the Juvenile Court of the District of Columbia. Introduced by Representative Goodykoontz, June 9, 1922. Referred to Committee of the District of Columbia.

C. A REVIEW OF LEGISLATION CONCERNING NURSES

1. *National*

All legislation pertaining to public health is, obviously, of interest to nurses and public-health nurses. The Sixty-seventh Congress has had before it, however, a number of bills which directly concern the members of the nursing profession. Perhaps the two most important are the Wadsworth-McKenzie pay bill (H. R. 10972) and the Lehlbach-Sterling reclassification bill (H. R. 8928).

The Wadsworth-McKenzie bill is designed to readjust the pay and allowances of the Army, Navy, Marine Corps, Coast Guard, Coast and Geodetic Survey, and Public Health Service. It passed the House on May 12, 1922, and the Senate on May 22, 1922, was considered in conference, agreed upon, and signed by the President.

The act takes effect on July 1, 1922. Section 13 of the act provides the following annual rates of pay for Army and Navy nurses (members of the Nurse Corps of the Public Health Service are not affected by this act):

First three years' service	$ 840
Second three years' service	1,080
Third three years' service	1,380
From tenth year on	1,560

In addition to their pay as nurses, superintendents of nurses receive a money allowance of $2,500 a year; assistant superintendents, directors and assistant directors, $1,500 a year; and chief nurses, $600 a year. Nurses are also allowed subsistence (60 cents a day) and an allowance for rental ($20 a month), the same as certain officers. (A. J. P. H., May.)

The Lehlbach-Sterling bill provides for reclassification of all civilian government employees. The bill passed the House on December 15, 1921, and was reported in the Senate on February 3, 1922, with several important amendments, some of which directly concerned nurses. In the bill as originally drawn, nurses were included with housekeepers under the Institutional Service. The Senate eliminated

this service entirely and placed nursing in the Professional and Scientific and Subprofessional Services. In the former service, there are six grades with compensation ranging from $1,800 a year to $7,200, depending upon the type of work performed, the amount of responsibility and other factors. Salaries in the Subprofessional Service are from $1,020 to $3,180 a year, divided into six grades. The nurses of the Public Health Service would be governed by this salary schedule.

Several pension bills which are pending contain provisions relating to nurses. The bill H. R. 4, which passed the House on February 1, 1922, and has been reported in the Senate, provides for a pension of $20 a month to all women who served as nurses for ninety days or more during the War with Spain, the Philippine Insurrection, or the Chinese Boxer Rebellion. A bill (S. 3629) has also been introduced to give a similar pension to nurses supplied by the American Red Cross to the Army for thirty days or more during the War with Spain. Another pension bill (H. R. 10031) would give $50 a month to nurses who served in the Civil War. No action has been taken on these last two bills.

2. *State*

During 1922 the legislatures of eleven states have been in session. Eight of the nine which began in January adjourned in April. The Massachusetts legislature is still in session. The Louisiana legislature convened in May and that of Georgia in June, both being now in session. Nursing legislation has been enacted or considered in several of these states.

In New York, the law relating to registration of nurses was amended by extending until January 1, 1923, the period under which nurses could apply for license to practice as registered nurses under waiver, and also extending until September 1, 1922, the date of waiver for attendants. This was done in order to accommodate many nurses who had not already taken advantage of the law, and who could only do so under an extension of it. Maryland passed laws requiring the registration of practical nurses and giving credit to nurses for training received in schools of public health. Massachusetts has passed an amendment to the school medical inspection law, by which suspicious cases among school children are referred to the school nurse or physician. A bill to increase compensation of the chairman of the board of registration in this state was defeated. In Virginia a law adding a clinic of doctors and nurses to the bureau of tuberculosis education of the State Board of Health was passed. A bill authorizing the State Department of Health to employ tuberculosis nurses was introduced in New Jersey, but not passed. There were no changes in nurse registration laws in Kentucky, Mississippi, or South Carolina.

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STATE HEALTH NOTES

Alabama

Dr. Leon C. Havens and Dr. Wm. C. Knipmyer, both formerly of the Johns Hopkins University School of Hygiene, have recently been appointed to the State Board of Health, Dr. Haven as director of laboratories, and Dr. Knipmyer to the Bureau of Epidemiology.

Colorado

Dr. Tracy R. Love is now serving as secretary of the Colorado State Board of Health, elected February 28, 1922.

The State Board of Health has recently put into operation a new $10,000 bacteriological and serological laboratory under the supervision of Dr. Wm. C. Mitchell. Diphtheria cultures are examined daily; blood is tested for Wassermann reaction, smears are examined for gonococcus and Vincent's angina; sputum is examined for tuberculosis. Under the venereal disease division eleven dispensaries are being maintained throughout the state, two new ones having been recently added.

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The antivivisectionists of Colorado, by means of the initiative and referendum, have filed a bill prohibiting experimental operations on animals except to relieve or cure the animals themselves, which is to be voted upon at the November election. If adopted, this bill would abolish all experimental study on problems of biology in both general and veterinary medicine; in fact, it would completely disrupt all necessary research work in that state and also eliminate the preparation of vaccine, serums, and other biological products. It would interfere, not only with human health but with the live stock interests, for it would check experiments on animal disease. Two years ago California defeated a similar measure by a quarter of a million votes. In 1923, a majority of the states will hold legislative sessions. Probably similar bills will come up

in each one of the sessions as the antivivisectionists are active everywhere. This type of legislation forms a public-health problem and deserves the antagonism of all sanitarians. The best way to combat such propaganda is by education of the general public as well as by a mobilization of medical and public-health groups. This whole matter is well presented in an editorial in the *Journal of the American Medical Association* for June 17, 1922. (*J. A. T.*)

Connecticut

The New Haven Health Center has done such good work, and there is so great a desire shown for its continuance by the citizens generally, that it is hoped that the Board of Finance will appropriate the necessary funds in the fall to entirely finance the Center for the year 1923. It will then be entirely absorbed by the Department of Health, with the exception of the Visiting Nurse Association. Philip S. Platt, C. P. H., the director, has planned to give half time to the Health Center from January to June, 1923, at which time he expects to resign.

Idaho

During a recent epidemic of typhoid at Gilmore, a mining camp 17 miles from Salmon, and 70 miles from the nearest physician, the Red Cross came to the assistance of the stricken camp and through the efforts of the public-health nurse saved the lives of all but one of the 18 victims. The community has been brought to a realization of the value of the public-health nurse and the services of the Red Cross through the overcoming of great difficulties in this case. At the time of the epidemic the snow was four or five feet deep in that section, snow had to be melted for water, wood cut, and trails shoveled, but, fortunately, this camp had a small hospital of eight beds which was very well equipped.—*The Red Cross Courier*, June 3, 1922, p. 6.

Illinois

A better baby conference and public-health exhibit of large proportion was held June 24 to July 4 in connection with the Trans-Mississippi Exposition and Pageant of Progress in Rock Island. For this purpose the Exposition secured the use of the elaborate health educational exhibit equipment owned by the State Department of Public Health, which furnished the professional services of a physician and nurse in connection with the organization and direction of the better baby conference. The local health officials and many of the physicians gave their undivided support and assistance toward making a success of the undertaking, which was one of the biggest of its kind along the Illinois-Iowa line.

✣

The State Department of Health has arranged for a complete epidemiological study in Marshall, where typhoid fever has been endemic for some years. The Department has installed an emergency liquid chlorinator, and a careful examination will be made of all public and private water supplies and sewage disposal. The mobile diagnostic laboratory has been stationed in Marshall. Tests will be made of specimens from residents giving a history of typhoid fever as well as those engaged in handling milk and other food.

✣

Two important public-health conferences will be conducted in Chicago during the celebration of the Pageant of Progress Exposition, July 29-August 15. One will deal with the production and sale of safe milk supplies; the other will be concerned with the use of toxin-antitoxin as an immunizing agent. The State Department of Public Health is taking an active part in arranging for these meetings, having already issued invitations to certain representative public-health officials, milk dealers, dairymen, physicians and others who are particularly concerned.

The leading purpose of the conference on safe milk supplies will be the drafting of a model ordinance suitable for adoption by municipalities throughout the country. In this connection the State Department of Public Health is coöperating with the University of Illinois, and the State Department of Agriculture has worked out an ordinance which will be presented for adoption by the conference.

The other conference will be devoted largely to a discussion of the practicability of using toxin-antitoxin on a large scale for preventing diphtheria.

✣

Dr. Samuel S. Winner, chief district health superintendent of the State Department of Public Health, has organized the twenty-odd physicians on the field staff into three groups that are assigned to the northern, southern and central sections of the state. Each group has a secretary and holds bi-monthly meetings with Dr. Winner, who takes advantage of these

opportunities for personally presenting the policies of the department and for discussing field problems, particularly those of an epidemiological nature. The meetings held thus far have proved to be so helpful for all concerned that the scheme is now considered as a permanent function of the field service.

✣

A recent outbreak of 25 cases of typhoid fever on a single milk route in Kewanee caused the State Department of Public Health to send its mobile diagnostic laboratory to the assistance of local health officials in connection with an investigation of the situation. As a result, the source of the epidemic was located in the person of a carrier who handled milk on one of seven dairy farms that supplied all the milk for the route in question. The history of the carrier is unusual in that it shows no record of an attack of typhoid fever.

The successful outcome of this investigation has led the Kewanee health officials to start a movement that will embrace the medical examination of all milk and food handled in that city with the purpose of locating any other typhoid carriers that may be a source of danger to the public.

✣

It is reported that a physician in St. Davis, Illinois, paid $22.50 to the court in Canton on June 2 for failure to report certain births which had occurred in his practice. The complaint against him was brought by the local state's attorney at the request of Dr. H. T. Burnap, special agent of the State Department of Public Health.

On June 7 the local registrar of vital statistics at New Miden, paid $17.50 in fine and costs for a violation of the law which specifically provides that local registrars shall forward to the State Department of Public Health on or before the tenth day of each month all birth and death certificates received by him during the last preceding month. This prosecution resulted from charges preferred by a special agent of the Department and marks the opening of a series of legal proceedings against delinquent registrars.

Altogether there are some 1,425 local registrars in the State and 20 per cent of these, or approximately 300, have been habitually delinquent in filing their monthly reports according to state records. In some pronounced cases the monthly returns have been delayed for six and eight months. This situation has created an evil appearance among the physicians, the undertakers and the public in the communities concerned, for each of these groups as well as the local registrar bears a definite responsibility in connection with birth and death registration.

✣

The Supreme Court of Illinois has recently delivered an important and interesting opinion concerning public health, a copy of which appears in the U. S. *Public Health Reports* for May 26, 1922. A typhoid carrier, named Jennie Barmore, was quarantined by the Chicago Health Department. Due to the intervention of various antimedical groups, she was induced to apply for a writ of habeas corpus. In refusing to grant the writ, the court delivered an essay on sanitary law worth perusal by all sanitarians. The court stated that the preservation of the public health is one of the sovereign duties of the state, that it is a reasonable exercise of its police power, and that by legislative enactment this power may be delegated to ministerial boards, such as the state health agency. The court discusses scientifically the danger from human infection carriers and concludes that the restraint by quarantine of a typhoid carrier is a valid exercise by the state of its authority. Such action was not unreasonable, so as to be illegal, and the rules governing the action were by no means arbitrary. The Chicago Department of Health acted as agent for the State Department of Health and the quarantine was authorized by the latter body. Among the significant statements of the court are these:

"The health of the people is unquestionably an economic asset and social blessing, and the science of public health is therefore of great importance. Public-health measures have long been recognized and used, but the science of public health is of recent origin, and with the advance of the science, methods have been greatly altered."

"Among all the objects sought, to be secured by governmental laws, none is more important than the preservation of public health."—People *ex rel.* Barmore v. Rorbertson *et al.*, 134 N. E. 815. (*J. A. T.*)

Indiana

The Housing Division of the Indiana State Board of Health has added one more inspector, whose entire time will be given to inspecting and scoring rural homes. It is expected that he will be able to inspect and score five hundred homes in different parts of the state in one year.

The State Health Commissioner and the Sanitary Engineer made a sanitary inspection of Winona Park on Winona Lake, Kosciusko County. This park is conducted upon the Chautauqua plan, and not infrequently it has twelve to fifteen thousand persons in one day. There are two large auditoriums, five large hotels and two hundred cottages. This is the home of Billy Sunday, the evangelist. The inspection found the water supply and drainage excellent. Two very popular springs were suspected of not supplying good water. The inspection of these springs and analysis of the water they supplied showed them to be pure. Winona Park is well supplied with sewers, and sewage is disposed of in septic tanks of ample size.

✣

The Indiana Health Exposition, which closed May 29th, was a great success. Praise came in from all sides, yet the attendance of close on to 100,000 was not quite up to expectations. All commercial exhibitors expressed themselves as well satisfied, and the educational exhibitors in a combined communication expressed full satisfaction. The Indiana State Fair Association gave the use of the Coliseum, 80,000 square feet, and also the use of the Women's Building, without charge. Governor Warren T. McCray with his wife and family visited the Exposition one afternoon and evening. He has written a letter highly approving and expressing his satisfaction with the Exposition.

✣

With the help of the International Health Board an all-time health officer has been placed in Fulton County. Rochester is the county seat. This county has about 17,000 inhabitants. Dr. John L. Hydrick from the International Health Board will help the all-time health officer, Dr. Arthur L. Oilar, for perhaps two months. The force will consist of the all-time health officer, one trained sanitary inspector, one nurse and one stenographer. The International Health Board will pay the salary of the all-time health officer.

✣

Dr. Will Shimer, for twelve years superintendent of the laboratory of hygiene of the Indiana State Board of Health, resigned June 1st. His place has been filled by the appointment of Dr. A. G. Long, M. D., and C. P. H. Dr. Long assumed control on June 12.

✣

The first installment of money according to the Sheppard-Towner bill was received and the extensions and activities for the maternity and child hygiene division have been started.

✣

The entire State Board of Health, five in number, will make the annual inspection of the Indiana State Sanitorium at Rockville, Indiana, June 20.

Kansas

The Division of Water and Sewage is making an extensive investigation to determine the degree and sources of pollution of the Kansas River.

Mr. W. J. Davies has been appointed acting state registrar for Kansas.

Massachusetts

Fifteen thousand dollars has been appropriated from the supplementary budget of the Legislature for use in "extending the activities of the Division of Hygiene in the protection and care of mothers and conservation of the welfare of children," this amount to be expended during the remaining months of the current year.

✣

Miss Frances B. Mayer has been appointed Special Investigator to the Subdivision of Venereal Diseases of the State Department of Public Health. This appointment became effective May 15th. Miss Mayer has done exceptionally fine work in connection with the Out-Patient Department of the Boston City Hospital.

✣

The following order was adopted by the House of the Massachusetts Legislature on June 9, 1922:

"*Ordered*, That the Department of Public Health is hereby directed to investigate the entire subject of tuberculosis in the Commonwealth, including the matter of state, county and municipal tuberculosis hospitals or hospital district created by legislative act; ascertain the cost of construction and present maintenance cost of said state, county and municipal tuberculosis hospitals or hospital district created by legislative act; make an investigation of the present physical valuations of said property in detail, and report as to the advisability of the Commonwealth taking over and thereafter maintaining either county or municipal tuberculosis hospitals or hospital district created by legislative act, together with an estimated statement of the cost necessary to effect such transfer of said hospitals to the

State. Said Department shall in its report to the next General Court, to be made on or before the second Wednesday in January next, also report what, in its opinion, should be the general policy to be pursued by the Commonwealth, both as to methods of treatment and distribution of expense thereof in relation to the entire subject of tuberculosis in any state, county or municipal hospital, or hospital district created by legislative act, within this Commonwealth."

An appropriation of $3,000 has been granted the State Department of Public Health to make the investigation of the status of tuberculosis through the state, as authorized above.

✣

The annual convention of the International Association of Dairy and Milk Inspectors will be held in Boston this year if the cordiality of the invitation has anything to do with it. Invitations have been extended by a large number of officials and organizations. It is evident that the convention is not considered a local matter but a New England affair, as indicated by its widespread endorsement. New England has always been foremost in supporting efforts leading to improvement in dairy products, and now should receive the encouragement and inspiration that would follow a meeting of this body in her territory.

✣

School clinics for children three or more years behind their grades have been established in Massachusetts, through the coöperation of the State Department of Mental Diseases and the Department of Education. Approximately 3,000 children have been examined since the organization of the clinics in 1921. The work has been constructive from the start, the purpose being to ascertain exactly what school progress the child is making; to insure that he is not worked beyond his capacity, and to ascertain any special reasons for his lack of development.—*Boston Medical and Surgical Journal*, Jan. 26, 1922. (*Mother and Child*, June, 1922, p. 278.)

Michigan

A coöperative inspection of Michigan summer resorts is being carried on by officials of the State Health Department, and an assistant engineer left Lansing the last of June in charge of the laboratory truck on the annual tour. All resorts inspected by the portable laboratory will be placed in one of four classes —excellent, satisfactory, dangerous, or unsafe, and the names of the resorts and responsible officers with their classification will be published. Classification will be based on water, milk, and food supplies, sewage and garbage disposal, housing conditions, bathing beach sanitation, drainage and mosquito control, neatness and general appearance of the grounds.

According to Dr. Olin, state health commissioner, resort sanitation as conducted by the Michigan Department of Health does not consist necessarily of mere inspection of garbage cans and prying into nuisances, but consists of carrying on in the field the functions of the Department. All laboratory examinations are made free of charge by the laboratory bureau. Reports of the findings will be made at the close of the inspection tour, and advice and recommendations will be meted out accordingly by the Department.

✣

Dr. John W. Towey, tuberculosis clinician of the traveling clinic of the Michigan Department of Health, has resigned his position to become superintendent of the new Delta-Menominee County Sanatorium at Powers, Michigan. Dr. Charles A. Wilson of Detroit, formerly superintendent of the Detroit Tuberculosis Sanatorium, will act as clinician during the summer.

✣

The State Department of Health is starting preliminary proceedings for the prosecution of 25 local registrars of vital statistics in 18 different counties, because of alleged failures on their part to comply with the state law requiring that notices of all births and deaths within the counties be filed with the state authorities before the 5th of each month. These registrars are liable under the law to a $200 fine and 60 days' imprisonment.—*Survey*, April 1, 1922.

✣

In 1921 Detroit spent for the maintenance of the health department $1,527,355, or $1.62 per capita. Of this sum, 73 cents were devoted to the Herman Kiefer Hospital. The maintenance item, less hospital charge, is 89 cents per capita. The death-rate during 1921 was 12 per 1,000 population.

Mississippi

Among bills which were enacted into laws by the Mississippi Legislature during 1922, one amends the present practice of dentistry law. It provides that dental hygiene shall be recognized as a profession and those practicing it

shall be examined and licensed in order to permit them to practice. This practice shall be only under the supervision of a registered dentist and in his employ. Another bill provides for the procedure in dealing with nuisance cases. It empowers the State Board of Health, when informed by a county health officer or otherwise of the existence of any matter likely to spread epidemics and to affect public health, to declare same a nuisance. Proceedings shall forthwith be commenced by the proper prosecuting officer in the district. A third law enacted that any physician guilty of performing a criminal abortion or guilty of violation of any anti-narcotic laws, or an habitual narcotic drug addict shall have his license revoked and be disbarred from practice. Appropriation acts carried $124,000 for the State Board of Health for general expenses for each of the years 1922 and 1923; $16,000 was appropriated for the prevention of venereal diseases.—*(J. A. T.)*

New Jersey

Paterson reports a population in 1921 of 137,893, an increase of 13,079 in six years, and a death-rate of 12.68, which the Board of Health states is a decrease of 3.28 since 1914, notwithstanding the increased population. The total number of deaths reported in 1921 was 1,739. Early in 1921 a full-time health officer, Dr. J. Alexander Browne, was appointed by the Board of Health, and in December a registrar of vital statistics. There were 259 deaths reported of infants under one year, or a crude death-rate of 18.77 per 1,000. One hundred and fifty still-births were recorded. New Jersey has recently been admitted to the United States Registration Area for Births, having attained a reporting efficiency of 95 per cent of the total births. In 1921, 3,154 births were recorded in Paterson, giving a birth-rate of 23.18 per 1,000. During the year there were reported 2,902 cases of contagious diseases, whooping cough leading with 775, followed by diphtheria, 386; tuberculosis, 279, and scarlet fever, 226. Twenty-four cases of typhoid fever were reported, all but one of which were imported from other communities.

New Mexico

A portion of the Sheppard-Towner appropriation allotted to the state has been assigned to the State Bureau of Public Health. This Bureau has made plans for its part of the activities for the protection of maternity and infancy to be conducted by the New Mexico Department of Public Welfare. Miss Margaret Tupper, a Vassar graduate of large experience in public-health nursing and social work, directs both the divisions of Child Hygiene and Public Health Nursing.

The Bureau plans to have a field demonstrating nurse, whose activities would be those usually conducted by a public-health nurse in the fields of prenatal care, infant hygiene, baby health and pre-school hygiene. A county would be used as a unit and this nurse would spend three months in each of four counties, with an additional week in each case for transferring her station. This covers a period of thirteen months. This nurse would receive $175 a month and an allowance of $83.33 a month for automobile upkeep, the nurse supplying her own automobile, as is the case of all public-health nurses in the state.

A second field worker will be appointed to act as a midwife instructor. The local health nurses will organize the midwives into classes at convenient points in preparation for the visit of the instructor, who will give a series of twelve lessons to each class. After the midwives have received instruction, the local nurse and health officer for the county can then maintain a close check upon their work. The salary and traveling expenses of this nurse will be the same as for the demonstrating nurse. Parental instruction and directions for the care of infants and young children have been mailed to mothers of all babies whose births have been reported to the Bureau since the fall of 1919. These instructions are in both English and Spanish, and it is proposed to have enough of these printed that the field workers and public-health nurses may have plenty in addition to those being mailed constantly from the Bureau.

✝

On May 25, Dr. A. G. Shortle, secretary of the New Mexico State Board of Public Welfare, died at his home in Albuquerque, from septicemia. The Board of Public Welfare has all of the powers and duties of the former Board of Health.

Miss Catherine Taylor, public-health nurse of Chaves County, has resigned to take a similar position in California. Her successor has not yet been appointed.

Miss Carrie Wise, Red Cross nurse of Roswell, has been appointed school nurse by the board of education of that city.

Dr. C. M. Bueler, Tucumcari, has been appointed health officer of Quay County, succeeding Dr. W. Leming, who resigned.

H. F. Gray, state sanitary engineer, will spend several months on the road, inspecting water and sewerage works. Several new installations are under way, or will soon be undertaken, as a number of towns have voted bond issues for such purposes. These are tangible results of nearly three years' effort on the part of the State Bureau of Public Health.

New York

The twenty-first annual conference of sanitary officers and the fourth annual conference of public-health nurses of New York State were held jointly under the auspices of the State Department of Health at Saratoga Springs, June 27-29, with an attendance of nearly 1,000.

At the joint sessions addresses were delivered by Commissioner Biggs, Governor Miller, Dr. Victor C. Vaughan, President Livingston Farrand, Dr. Richard A. Bolt, Prof. E. V. McCollum, and Dr. Florence L. McKay, director of the new Division of Maternity, Infancy, and Child Hygiene, in which great interest was manifested.

The sessions of the health officers were addressed by Prof. George C. Whipple, Dr. Hibbert W. Hill, Dr. George E. Vincent, Dr. F. W. Sears, Dr. O. Z. Bouton and Dr. B. P. MacLean. At the special sessions for nurses, the speakers included Bailey B. Burritt, Miss Frances Meyer and Miss Wilhelmina Beyers. A program of music and speeches was broadcasted from Schenectady, which included a five-minute talk on the work of the health officer by Dr. Biggs.

Dr. Stanton P. Hull, of Grafton, was elected president of the Sanitary Officers Association, and Dr. Montgomery Leary, of Rochester, secretary. The Eastern New York Public Health Association held its annual dinner at Albany June 22, and 23 physicians, who have been taking the post-graduate course in public health, received certificates. Dr. William C. Tredor, of Scotia, was elected president.

✣

On July 1 the Division of Child Hygiene became the Division of Maternity, Infancy and Child Hygiene, under the Davenport Act.

Miss Wilhelmina Beyers, R. N., has been temporarily appointed by the State Department of Public Health as instructor of nurses in pre-natal, maternity and child welfare work. She started on her new work June 15. Miss Beyers is well qualified for this position. She was graduated from Kings County Hospital, and later had charge of the obstetrical division of that hospital for a year. During the war she was in charge of the officers' surgical and medical wards of United States Base Hospital No. 37 in England for one year, and has since spent three years in the Maternity Center Association of New York City, which work included pre-natal and maternity work and organizing new centers.

✣

In order to prevent blindness resulting from the infection of the eyes at birth, the Public Health Council, at a meeting held February 7, 1922, adopted an amendment to the New York State Sanitary Code by adding to Chapter II a new regulation known as Regulation 10, to read as follows:

"Precaution to be observed for the prevention of ophthalmia neonatorum: It shall be the duty of the attending physician, midwife, nurse or other person in attendance on a confinement case to use at the time of the delivery prophylactic measures such as the instillation into both eyes of one per cent solution of nitrate of silver, or an equally efficient agent, to prevent ophthalmia neonatorum or the development of sore eyes in the infant due to infection at birth."

This regulation went into effect April 1, 1922.

According to the records of the New York State Commission for the Blind, there are in the state nearly 1,000 persons blind from ophthalmia neonatorum. Until 1920 no record of these cases was kept by the State Department of Health. During that year 66 cases were reported.

North Dakota

Dr. Austin Egdahl has been recently appointed director of the State Public Health Laboratory at University.

The State Medical Association met at Jamestown, June 1 and 2.

Oklahoma

The State Health Department has put on a campaign of education to arouse sentiment in the southeastern part of the state toward the eradication of malaria and mosquitoes, expecting to ask the legislature for an appro-

priation. It is also hoped that some federal aid may be obtained.

Three tuberculosis hospitals under the management and control of the State Health Department are now open, one of 100 beds in the western part of the state at Clinton, one in the eastern part in the mountains near Talihina and one for negroes near the negro town of Boley.

As usual at this time of the year, the State Health Department is putting on free clinics in various towns for vaccination against typhoid fever.

There have been more calls for anti-rabies serum to be delivered free during the last ninety days than past records show for the same period.

The Vital Statistics Department has improved to such an extent that the matter of admission to the federal registration area has been taken up with the Census Bureau at Washington.

The work of controlling venereal diseases has taken on new activities and the physicians of the state are taking more interest in their reports since it is possible to obtain the necessary drugs free for the poor and indigent.

Pennsylvania

Suits for damages totaling nearly $300,000 have been brought against the Blue Ridge Water Supply Co. of Walnutport, Pa., by some thirty residents who allege that the supplying of polluted water caused typhoid, sickness and death. T. McKeen Chidsey, of Easton, Pa., counsel for the plaintiffs, states that owing to water shortage the flow of a spring was diverted to one of the water company's reservoirs through an open channel. It is alleged that this channel received pollution from various sources, including the overflow from a privy. It is maintained that this spring should have been protected from possible contamination and that the water should have been conveyed through closed conduits. Mr. Chidsey states that under Pennsylvania practice the plaintiffs in such cases "need to aver and do aver only the fact that they drank the water and that the water was polluted due to neglect."

From C. A. Emerson, Jr., chief engineer, Pennsylvania Department of Health, it is learned that of 53 cases of typhoid during the outbreak, about 80 per cent had onsets from June 13 to 21, 1921. All the persons suffering from typhoid had used the public water supply and no other probable common cause was found. Laboratory findings of the State Department of Health indicated sewage contamination of the water but no active typhoid case or carriers could be located on the watershed. From circumstantial evidence it seems that the outbreak was caused by the water supply. One of the springs forming the supply, Mr. Emerson states, was not far from a public highway and may have been polluted while being used by an itinerant typhoid carrier.

Walnutport borough has a population of about 1,000. The water supply in question, Mr. Emerson states, was never approved by the State Department of Health. In fact, its existence was only learned of by chance a few weeks before the outbreak.—*Engineering News-Record*, June 8, 1922. (*J. A. T.*)

South Carolina

Orangeburg is actively fighting malaria through mosquito control, having reduced the cases in one year about 50 per cent. There has been practically no typhoid in the city within the year, only three cases having been reported, and two of these were from outside the city. Inspector P. G. Brigham, M. D., has had all privies inspected and made fly-proof, and in cases where instructions are not obeyed they are nailed up and sealed by the Board of Health. All closets are cleaned every 14 days and stamped with a sticker stating the date cleaned. In past years typhoid has been prevalent in this district, particularly among the great number of negroes. Due to the most careful surveillance, it has now been practically wiped out in this section.

West Virginia

Last spring a strong agitation arose in Bluefield for a substitute for the old mayor-and-council type of government, which in the minds of many people had too long paid political debts out of the city treasury. A new charter was drafted by a committee providing for the modern commission-manager type of government. Among the first things accomplished was a change from slipshod methods of disbursing to an up-to-date systematic plan of control. A part-time health officer gave way to one on full time. A city physician, a sanitary inspector, public-health nurses and a bacteriologist were appointed, and for the first time the people felt that their health was adequately safeguarded.—Clarence E. Ridley, *The American City*, June, 1922, p. 563.

PUBLIC HEALTH LABORATORY NOTES

Abstracted by ARTHUR LEDERER, M. D.

Leukocytic Reactions to Morphine.—The results show the same general leukocytic reaction to morphine in rabbits, dogs and men, namely, a relatively slight leukopenia, lasting for about an hour after the drug, followed by a more pronounced leukocytosis maintained for ten hours or more, and returning to normal within twenty-four hours. The differential counts show a large relative increase in the number of polymorphonuclear neutrophils, with a diminution in the percentage of lymphocytes, and relatively insignificant changes in the percentage of the other leukocytic elements. It is obvious that, in estimating the diagnostic value of a white blood cell count after the subcutaneous administration of morphine, allowance must be made for the effect of the drug on the count.—Chauncey D. Leake, Jour. A. M. A., 78, 1687 (1922).

✣

Application of Mallory's Connective Tissue Stain to Formaldehyde-Preserved Tissues.—The several steps are:

1. Preserve in formaldehyde solution.
2. Prepare sections in the ordinary manner.
3. Mordant sections in 1 per cent aqueous chronic acid from forty-eight to seventy-two hours.
4. Wash in water.
5. Stain in 0.5 per cent aqueous acid fuchsin from five to twenty minutes.
6. Wash quickly in water.
7. Fix stain in 1 per cent aqueous phosphomolybdic acid from one to five minutes.
8. Wash in water two minutes.
9. Counterstain in the aniline blue orange G mixture from five to twenty minutes; the sections should be somewhat over-stained. The composition of this solution is:

Aniline blue (Gruebler, water soluble)	0.5 gm.
Orange G (Gruebler)	2.0 gm.
Oxalic acid	2.0 bm.
Water	100.0 c.c.

10. Dehydrate rapidly. The excess of aniline blue is removed largely in the lower alcohols; the degree of differentiation should be controlled by microscopic inspection.
11. Clear and mount.—Leslie B. Arey, *Jour. A. M. A.*, 78, 1708 (1922).

✣

The Occurrence of Diphtheria Bacilli in the Vagina.—The authors refer to recent reports that diphtheria bacilli were found in from 14 to 23 per cent of the vaginal secretions examined. The writers examined 209 vaginal smears for diphtheria bacilli, including 58 healthy gravidae, and 30 cases of retroflexion, or dysmenorrhea prolapse, oöphoritis or adnexitis. In none of the cases were they able to discover genuine diphtheria bacilli, although spurious diphtheria bacilli were found in 45 per cent of the smears.—F. Loenne and P. Schugt, *Zentralbl. Gynaek.*, 46, 93 (1922); Jour. A. M. A., 78 1770 (1922).

✣

A Simple Method for Demonstrating Tubercle Bacilli in the Spinal Fluid.—Five cubic centimeters of spinal fluid is collected in a well cleaned centrifuge tube. To this, from one-third to one-half volume of 95 per cent alcohol is slowly added, the tube being gently shaken all the while so as to obtain an evenly distributed cloud of coagulum rather than a single thick ring at the top. More or less alcohol may be added according to the density of the coagulum. In case very little or no coagulum is formed, a drop or two of dilute solution of egg albumin may be added. The optimal amount of coagulum is one that forms a milky appearance, such as one would call a "trace" in urine analysis. The tube is then centrifuged at a fairly high rate of speed for one-half hour, or longer in case the precipitate is scanty. The supernatant fluid is then carefully decanted, leaving the albuminous precipitate in a very tiny drop of fluid. With a wire or a capillary pipet, this is then transferred to three or four slides, care being

taken not to touch the sides of the tube in withdrawing the loop, since the material may stick to the tube and be lost. One slide may be reserved for Gram stain or differential count, and the rest stained by the Ziehl-Neelson method. In the last year this method was used in seven successive cases of tuberculous meningitis at the Massachusetts General Hospital, and tubercle bacilli were found in every case without prolonged search. Since the method was devised, surgeons of the genito-urinary department of the Massachusetts General Hospital have used it with considerable sucecss in demonstrating the tubercle bacilli in the urine of patients with renal tuberculosis. However, they found it necessary first to centrifuge the specimen at a low speed for five minutes to throw down cells and debris. Not many bacilli will be caught in this sediment on account of the relatively high specific gravity of the urine. The clear supernatant urine is then poured off and treated as outlined above.—Sheo-Nan Cheer, *Journal A. M. A.*, 78, 1612 (1922).

✣

New Technic for Wassermann Test.—The author uses a 0.5 per cent suspension of washed human red cells in saline; clear blood serum of guinea-pigs obtained by cardiac puncture; two antigens, (1) the acetone insoluble lipoid antigen of Noguchi, prepared from human heart; (2) cholesterinized extract of human heart, alcoholic. The patient's serum is obtained by puncture of a vein, must be clear and is heated to 56° C. for twenty minutes. Rabbits are immunized against human erythrocytes by four intravenous injections followed by two or more injections intraperitoneally. When the serum titrates 800 or over the animal is bled from the ear or heart and the serum is dried on filter paper. Titrations of all reagents are made before use, nearly in accordance with the directions of Craig. Buttles claims for his technic, which he describes in detail, that the combining of erythrocytes, saline and complement, decreases the number of pipetting operations. Errors from inaccurate pipetting of small amounts of complement and of cell suspension are avoided, as well as errors from inaccurately graduated pipets. The relation between amount of cells and of complement is the same in all tubes. The first incubation furnishes a control against any non-specific hemolysis.—E. H. Buttles, *Am. Jour. Syph.*, 6, 280 (1922); *Jour. A. M. A.*, 78, 1841 (1922).

✣

Typhoid Bacilli in Spinal Fluid.—Typhoid or paratyphoid bacilli were found in the spinal fluid in 93 per cent of fifteen children examined from the fifth to the thirtieth day of typhoid or paratyphoid. There did not seem to be any connection with the duration of the disease or its clinical form. In two children with symptoms suggesting encephalitis, the fluid contained typhoid bacilli, although none could be cultivated from the blood.—G. Caronia and L. Auricchio, *Pediatria*, Naples, 30, 337 (1922); *Jour. A. M. A.*, 78, 1852 (1922).

✣

A Facultative Spore-Forming Lactose-Fermenting Organism From Iowa Surface Waters (B. macerans).—A Gram-negative sporing bacillus capable of fermenting lactose and growing aerobically was isolated from two chlorinated surface water supplies in Iowa. The morphological, cultural and physiological characteristics are detailed.—J. J. Hinman, Jr., and Max Levine, *Jour. Am. Water Works Association*, Vol. 9, No. 2 (1922).

✣

Streptococci in Chronic Respiratory Infections.—The streptococcal flora in various samples of sputum from the same sample of sputum from the same source, is, in bronchial asthmatics, fairly constant and quite complex, from eight to fourteen types of streptococci occurring in single specimens. The streptococcal flora in various particles from the same sample of sputum does not vary. The simple method of using a twenty-four hour serum broth culture of a washed particle of sputum as a basis for vaccine preparation seems as efficient as any, the streptococcal flora in such a culture being approximately parallel to that in the sputum itself. There is in general a close parallelism between the grouping of streptococci arrived at by applying Brown's method of classification and through immunological methods (agglutinations).—W. Ray Hodge and Cecile Cohen, *Studies Res. Div. Connaught Antitoxin Laboratories*, Vol. 1, p. 132 (1922).

A Cultural Study of Anaerobic Spore Bearing Bacteria.—The Barber single cell technic is the most feasible method of obtaining anaerobic spore-bearing in pure culture. The vaseline-seal boiling method is the most reliable way of obtaining anaerobiosis, especially in liquid media. The technics now commonly used, involving the use of pyrogallic acid and sodium hydroxide, vacuum exhaustion, hydrogen displacement and platinized carbon, were found to be unreliable. If the proper degree of anerobiosis is maintained the bacteria will grow well on relatively simple media, provided the hydrogen ions are adjusted to the optimal degree of concentration, which was found to be P_H 7.2. A certain number of the organisms studied produced no proteolysis on any of the media. Of those organisms studied which produced proteolysis, two groups may be made, the strongly proteolytic and the feebly proteolytic. B. putrificus and B. tetani must be placed in the feebly proteolytic group. Proteolytic activities of these bacteria are not lessened by the presence of fermentable carbohydrates. Morphology offers but little aid in the differentiation. The hemolytic properties may in some cases be of differential value.—Morton C. Kahn, *Jour. Med. Res.*, 43, 155 (1922).

✣

The Diameter of Human Red Corpuscles at Different Ages.—The average diameter obtained for adult men and women between 30 and 50 years old was 7.55 microns. At birth, however, the red cells are considerably larger, measuring 8.62 microns across. From this period they gradually decline to the age of 18 months when the diameter is 7.13 microns. Somewhere about this figure is retained till puberty is reached, when a sudden increase to 7.68 microns is noticed. The significance of these alterations is unknown.—Saragea, *C. R. Soc. Biologie*, Feb. 11, 1922; *Brit. Med. Jour.*, April 8, 1922.

✣

A Method for the Diagnosis of Death.—Under normal conditions the reaction of the blood is P_H 7.45 while that of the tissues is between 6.8 and 7.0 but within about 4 hours of death the reaction of the latter is distinctly acid. In the test for the presence of this acidity the author takes two silk threads. One of these is dipped in an acid solution of bromthymol-blue and is of a yellow color, while the other is dipped in an alkaline solution of the same dye and is of a blue color. These two threads are then passed in the form of a seton through a fold of the skin of the thigh, and left in position for one hour, after which they are withdrawn. If the patient is really dead, it will be found that the yellow thread retains its color unchanged, while the blue thread has become yellow in consequence of the post-mortem formation of acid. The threads, which can be prepared beforehand, may be preserved for a long time in the absence of light without deterioration.—Rebello, *C. R. Soc. Biologie*, March 18, 1922; *Brit. Med. Jour.*, April 29, 1922.

✣

The Excretion of Spirocheta Pallida Through the Kidneys.—Spirocheturia appears to be a striking phenomenon of the entire group of spirochetal infections. Syphilitic spirocheturia occurs in the stage of septicemic syphilis, in both the congenital and acquired infections. Spirocheta pallida, as is spirocheta icterohemorrhagica, may be excreted in enormous numbers through the convoluted tubules. During such excretion through the kidneys the spirochete of syphilis suffers greater destruction than does the icterogenic parasite, so that fewer spirochetes may reach the urine in syphilis than in infectious jaundice.—A. S. Warthin, *Jour. Inf. Dis.*, 30, 569 (1922).

✣

The Staining of Spirochetes in Cover Glass Smears by the Silver-Agar Method.—The method is as follows:

1. Prepare smears on No. 1 cover glass.
2. Dry thoroughly in the air.
3. Place in absolute alcohol 3 to 5 minutes.
4. Wash in distilled water.
5. Rinse cover glass with smear in 2% silver nitrate. Cover the smear side with another perfectly clean cover glass also rinsed in silver nitrate solution. Place the adherent pair of cover glasses carefully, so as not to separate them, in a bottle of 2% silver nitrate, and place in incubator for 1 to 2 hours; then remove the cover glasses from the silver nitrate solution and separate them.

6. Place the cover glass with the smeared side up in the following mixture:

2% silver nitrate solution.....3 c.c.
Warm 10% aqueous gelatine solution..5 c.c.
Warm glycerol .....5 c.c.
Warm 1½% agar suspension.....5 c.c.
5% aqueous hydroquinone solution...2 c.c.

7. After the solution is reduced remove and rise in 5% sodium thiosulphate solution.

8. Rinse in distilled water.

9. Absolute alcohol, xylol, balsam.

The authors believe that their method is the surest and safest diagnostic method yet devised for this particular purpose.—A. S. Warthin and A. C. Starry, *Jour. Inf. Dis.*, 30, 592 (1922).

✣

Sources of Error in the Epstein Method for Blood Sugar Determination.—The Epstein method for blood sugar determination when checked against standard glucose solutions and blood, gives results which are always too high and the percent of error is not constant. This source of error is due first, to the use of too great a concentration of alkali; second, too much heat; third, concentration of the protein free filtrate to too small a volume both before and after the addition of alkali. The modification described by the author brings the accuracy of the Epstein method reasonably up to that of the Lewis and Benedict procedure.—C. M. Wilhelmj, *Jour. Lab. Clin. Med.*, 7, 489 (1922).

✣

Blood Sugar Content of Capillary and Venous Blood.—In 20 individuals the capillary blood sugar was found to closely parallel the venous blood sugar. For clinical purposes the values may be considered identical.—I. Neuwirth and I. S. Kleiner, Jour. Lab. Clin. Med., 7, 495 (1922).

✣

Entameba Histolytica in the Testis and Epididymis in Chronic Dysentery.—The amebas found corresponded in every way to those previously found in the stools of the patient when first seen. This particular case presents the unique occurrence of the metastasis of Entameba histolytica to the epididymis and testis with definite, though slight local lesions in these organs, in a patient affected for many years with amebic dysentery, at the time of death nearly completely healed, with disappearance of amebas from the stools. It is the first recorded instance of such localization.—A. S. Warthin, *Jour. Inf. Dis.*, 30, 559 (1922).

✣

Bacteria in Gastric Fractions.—The organisms most frequently found in the stomach of normal and psychotic persons were members of the staphylococcus, streptococcus, lactobacillus and yeast groups. During an analysis approximately the same types and numbers of bacteria were found in the stomach irrespective of high and low acidity fluctuations. This indicates that the gastric acidity is not the most important factor limiting the bacterial content of the stomach during a fractional analysis.—N. Kopeloff, *Jour. Inf. Dis.*, 30, 613 (1922).

✣

Precipitin Reaction in Gonorrheal Discharges.—Although reactions are obtained when extracts of discharges from gonorrheal patients are added to the serum of a rabbit immunized with gonococci, similar reactions are frequently encountered with the serums of normal rabbits. Likewise, extracts of material from the genital organs known not to be infected with the gonococcus, as well as extracts of exudates due to infections by other organisms, give reactions with both antigonococcus serum and normal serum. Attempts to exclude the non-specific factor and thus obtain a specific reaction have failed. The precipitin reaction as recommended by Robinson and Meader (*Jour. Urol.*, Vol. 4, p. 551), is not applicable for the determination of the presence of the gonococcus in discharges from the cervix, urethra, etc.—M. F. Kelley, *Jour. Inf. Dis.*, 30, 623 (1922).

✣

Changes in Reaction in Lange's Test.—The agglutination of colloidal gold particles by spinal fluid is accompanied by an increase in the alkalinity of the medium in which this reaction occurs. This change in reaction is similar to that observed in the agglutination of bacteria by homologous immune serum.—E. F. Hirsch, *Jour. Inf. Dis.*, 30, 658 (1922).

An Easy Method of Finding Tubercle Bacilli in Sputum.—Prof. N. Pane of the Bacteriological Institute at the University of Naples has just published a new method in which a concentration of existing bacilli is obtained without any diminution in their number. The suspected sputum is placed in a sterile glass receptacle, and four times its volume of physiological salt solution added; this is then incubated at 37° C. for 24 hours. During this time the mucus and cells are liquefied by the proteolytic enzymes in the sputum. The centrifugalization of the bacteria is by this means rendered easy by the elimination from the liquid of the organic substances which spoil the clearness of the preparation and the tubercle bacilli are readily shown by the Ziehl-Neelsen method.—*Lancet*, May 27, 1922, 1056, (*D. G.*)

✣

Laboratory Tabulator for Making Differential Blood Count.—The importance of the differential count of blood corpuscles is universally admitted, not only as a means of making a reliable diagnosis, but also as a useful gauge for the prognosis and probable outcome of a disease. In making examinations, the eye becomes focused upon the field presented by the microscope, and in order to record each individual finding it is necessary to remove the eye from the microscope. Thus the eye is constantly adjusting and readjusting itself, which causes a continuous tension of the muscles of the eye. This method constitutes a loss of time, and when a considerable number of examinations are being made, there is the possibility of unreliable recording.

Dr. C. Penaflor of Manila, Philippine Islands, is presenting a machine, a sort of tabulator, whereby rapid and reliable results are obtained, and for which operation less training is required than to operate an ordinary typewriting machine. A differential count is accomplished with one hand, leaving the other free for focusing or changing the relative position of the plate and microscope. All that it is necessary to remember is the relative position of the keys corresponding to the different kinds of white blood corpuscle. The required key is depressed in succession as many times as the corresponding corpuscle appears in the field under observation in the microscope. Numbers are registered and additions made, so that at any time the totals for each variety appear in their respective positions.

The inventor claims for the apparatus the following advantages: 1. It facilitates differential blood counting. 2. It insures accurate and exact results. 3. It gives off-hand the percentages of the white corpuscles after one counting, without any further figuring. 4. It avoids fatigue and weakening of the eye, and other visual disturbances consequent upon those conditions. 5. It can be used for making differential counts of pathological erythrocytes, and, in fact, for any other examination that involves percentage finding, by simply substituting the name of leucocytes with appropriate labels.—*Modern Hospital*, June, 1922, p. 551.

How the New Tabulator Is Used

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CONVENTIONS, CONFERENCES AND MEETINGS

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ing meeting dates in order to avoid conflicts.

August 1-5, American Home Economics Association, Corvallis, Oregon.

August 22-25, National Medical Association, Washington, D. C.

August 28-Sept. 2, National Safety Congress, Detroit, Mich.

September 4-9, American Chemical Society, Pittsburgh, Pa.

September 11-16, National Exposition of Chemical Industries, Grand Central Palace, New York City.

September 17-21, National Conference of Catholic Charities, Catholic University, Washington, D. C.

September 24-29, American Hospital Association, Million Dollar Pier, Atlantic City, N. J.

October 12-14, Thirteenth Annual Meeting, American Child Hygiene Association, Washington, D. C.

Oct. 16-19, Fifty-First Annual Meeting, A. P. H. A., Hotel Statler, Cleveland, Ohio.

Foreign Meetings:

July 17-22, Third International Congress History of Medicine, London.

July 21-28, British Association, Section on Public Health, Glasgow.

August 25-Sept. 5, Third Pan-American Congress on Infant Welfare, Rio de Janeiro.

December 18-23, International Congress on Health Education, Paris.

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